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Management

A Good Time *May* Be Had by All (*Editorial*) 41
The Editor Says 42
In This Issue 43
Defense Program for This Fiscal Year Near Completion; Outlook. 44
National Unity; Sane Operation Urged by A. G. Myers 52
Print Cloth Case Ends—Nolo Contendere 54
Norwich Plant of U. S. Finishing Co. Finishes 100 Years 55
National Rayon Weavers Meet and Elect 56
N. C. Yarn Men Play at Pinehurst 63

Methods

Vat Dyeing Khaki Cloth—Short Cuts in Processing 46
Fabrics for National Defense—Shirting; Sweater 48
U. S. Research Institute Conference Overflows 57
Automatic Weft Straighteners at Riverside & Dan River 58
Headless-Package Twisting at Atlantic Rayon Corp. 59
Fluorescent Lighting Installation 60
Correct Roll-Covering Practice 64
Aridye Printing Process Makes Notable Advances 66
Waxing Sewing Threads 68
Flammability of Fibers Shown in Test 69
Fixing Hosiery Machines—Full-Fashioned 71
Fixing Hosiery Machines—Circular 72
Woolen-Card Operation for Quality Work 87
Overhauling and Cleaning Will Reduce Idle Loom Time 88
Alabama Operating Executives Meet at Auburn 89
Wool Overseers Annual Meeting 90
Loomfixers' Manual—Wool 93
Loomfixers' Manual—Cotton 94
Staple Cotton Fabrics 96

Merchandising

Fashion: A Rose Between Two Thorns 49
Check List of F.T.C. Taboos in Textile Advertising 50
Hosiery Fair Practice Rules Get a Hearing 56
To Buy or Not To Buy Puzzles Purchasing Agents 62

Mill Engineering

Cotton Machinery Lubrication—Fundamental Principles 67
Textile Equipment News 73

Men

Reducing Accidents by Employee Cooperation 70
Wage-Hour Law Analyzed at Charlotte, S.T.A. Meeting 90
Textile Personalities 97

DEPARTMENTS

Textile Equipment News..... 73
News of the Month..... 98
New Publications..... 77
The Overseers' Corner..... 85
Questions and Answers..... 91
New Machinery and Processes..... 73
Textile Calendar..... 99
Leading Editorial..... 41
New Dyes and Chemicals..... 76
News of Suppliers..... 78
Free for the Asking..... 82
News About Men..... 106
Textile Mill News..... 120
Overseers' Practical Helps..... 86

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TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

A Good Time May Be Had by All

OCCASIONALLY we yearn for the return of the good old days of journalism. They were such pleasant, easy days. Returning from a dinner, or a tea, or a meeting, the well-fed editor could sum it all up in these well-chosen words: "And a good time was had by all."

Or, come Christmas, he could declare, pontifically: "The editor and publisher wish for all their readers a Merry Christmas and a Happy New Year."

And it was all literally true. The editor *was* well-fed; everybody *did* have a good time; and a Merry Christmas and a Happy New Year was a safe bet.

These days, the program is different. True, editors still eat. But, beyond that, a good time isn't had by all—nor is Christmas necessarily merry nor the coming year assuredly happy.

We in this country may still anticipate a Merry Christmas. People in most of the countries of the world do not even dare to hope for merriment. They pray merely for a temporary surcease from bombings, a night's sleep, a supply of food which will appease hungry children and aged men and women.

The strong—the youth and middle-aged—could still carry on if they could find those few elemental gifts in their mythical Christmas stockings. But the ranks of the "strong" are being depleted rapidly. If the present trend abroad continues unchecked, there will eventually be no "strong" people left in the ranks. There will be only the weak, prostrated under the heels of a dictator and his henchmen.

THAT IS THE WORLD-PICTURE which confronts us as this Christmas season approaches.

This writer would be the last to suggest that the contemplation of that picture should impair the happiness of our children on Christmas morning. Their happiness is something too precious to be denied, so long as there is any chance of preserving it. In this part of the world which is still free to follow its star, every opportunity to rejoice in our way of life should be seized. It is one method of insuring its perpetuation.

But Christmas this year must also reinforce in all of us a determination to preserve that way of life, no matter what hardships may be involved, as a legacy which we must hand on to our children and our children's children. Fortunately, the "American way of life" is no longer a political shibboleth to be used and misused by one party or another. It has regained its place as a *national* concept.

We indicated on this page last month certain direction-lines which should be followed if the desired end is to be attained. We shall not repeat them here. But we do want to emphasize the need for facing facts, and for anticipating struggle and privation and, possibly, bloodshed.

Unfortunately, we came into this war—to the extent that we *are* in it—by the easy way. The outbreak of hostilities in September, 1939, brought to us soaring security prices and hectic industrial activity. When that first effect had worn off, and when an industrial recession seemed imminent, we got a new shot in the arm from our own defense program. Starting last May, that impulse has carried us to new levels of industrial activity.

These fifteen months of war and defense influence have produced a psychology which most industrialists and business men would probably deny, but which is still true: a latent belief that our prosperity depends upon the continuation of war abroad and upon the perpetuation of our defense program. Brought out into the daylight thus bluntly, that psychology requires no refutation here. At least those of us who went through the post-war effects in the 1920's and the 1930's should have no illusions about that kind of prosperity.

War and defense are evils which must be endured so long as the dictators endure—but they are *not* blessings, either with or without their false mustaches.

TO BRING THIS DISCUSSION down to the industry which this publication represents and serves, textile manufacturers have a choice to make this Christmas which will determine their progress during 1941 and in the years to come. They must choose between another runaway market and a sanity which the experience of the last two decades should dictate.

Next month, we shall indicate on this page certain simple lines of approach which the textile industry should follow for 1941. We shall make that program more detailed and more specific in our Annual Review and Forecast Number in February, and throughout the next year.

For this Christmas issue, however, we want merely to point out that never before in the lives of all of us has sound action been more imperative.

The textile industry can have a Merry Christmas and a Happy New Year only if it surveys a war-torn world and plots its way out of chaos as one powerful unit of a still great and powerful and free democracy.

Then, and then only, will a good time be had by all.

Douglas G. Woolf

THE EDITOR SAYS

What About Labor?

The exit of John L. Lewis from the presidency of the CIO approached pathos but ended on a note of absurdity. And the absurdity was of his own making.

He started it in his speech in support of Wendell Willkie. His pontifical dictum, and his threat—or promise—to resign as president of the CIO if President Roosevelt were reelected, reflected the arrogance of the man. His assumption that the defeat of his candidate, in an election involving 50,000,000 voters of all walks of life, would amount to a repudiation of his (John Lewis') personal leadership, represented a new high in conceit. For he thereby assumed that he, as one man, held the balance of power in a democracy of 130,000,000 people. All the other influences—the Solid South, the relief checks, the farm bounties, the world crisis—in his mind played no part in the election. It was just a personal question of support or non-support of John L. Lewis. If Mr. Willkie had won, therefore, Mr. Lewis would have been given a vote of confidence. Since Mr. Roosevelt won, Mr. Lewis had been "repudiated." And as a "reprisal," he removes himself from the CIO presidency.

What could be more ridiculous?

The pathetic side was not that caught by the news photographers in their snaps of Mr. Lewis weeping after his swan-song and surrounded by both supporters and opponents whose eyes were also tear-dimmed by the soul-jerking oratory of yester-year. It lay rather in the spectacle of an admittedly strong man who had become enmeshed by his own exaggeration of his strength.

Dictators abroad have used the Lewis technique effectively. The fact that he failed in his attempt to use it in this country is no reflection upon his potentiality as a dictator. But it just so happens that the United States isn't buying any dictators this year, thank you. That is the only encouraging thought to be extracted from this sorry mess in the ranks of organized labor.

And it is a thought which the Administration, returned to power, might well take to its heart. It was returned, not by any trend from democracy to dictatorship, but by a combination of two factors: (1) a disinclination to make a change during an increasingly serious world emergency; and (2) the political effect of the reckless spending of billions of the people's dollars.

★ ★ ★

What about the future of the labor movement in America? There are many manufacturers who believe that a continued schism in the ranks of organized labor is good for their own "cause," on the basis that a house divided within itself is easy to "beat." That would be true if the economic progress of this country depended upon a "victory" of one of these two groups. But since the only promise lies in effective cooperation between management and labor, that sort of thinking is erroneous. And although by labor we mean the millions of employed persons, nevertheless the articulate labor movement with which American management must deal is to a considerable extent the organized groups which represent, or presume to represent, those millions. We are thinking now, not of the textile industry, but of American industry in general.

If that is true, then a destructive and continuing warfare between factions within the labor movement is harmful, rather than helpful, to industry. That point has been proved in the recent years of bitter labor strife.

What is the outlook? The CIO has just "lost" a would-be dictator. The A. F. of L. is headed by a man who is certainly something less than strong. There is a job to be done by a really strong leadership in labor. Such leadership would have to be democratic in its instincts and procedure; anti-communistic and against every other ism; able to clean its own house of racketeering; constructive in its purpose, fair in its methods toward industry, and truly representative of its labor membership. In other words, it would have to be a real labor movement rather than a bureaucracy out of which a great many individual leaders and sub-leaders and flunkies make a living.

That's a big order. Whether it can be filled by the CIO, or by the A. F. of L., or by a cooperative group representing these two outfits, this writer does not know. But until it *is* filled, the true cause of labor will continue to be abused by fist-fights, racketeering, self-seeking individuals, and front-page absurdities.

The sooner real leadership appears, the better—especially in view of the defense emergency.

THE OLD JOHNSON MILL

CHRISTMAS comes to the textile industry—as it came in years gone by to the little old Johnson mill in Newark, N. J., shown on the front cover of this issue.

We reproduce that picture as a nostalgic reminder of the human staying-power which enabled the Johnsons to help develop the start of an industrial nation. But, more to the point, we also reproduce it with the belief that in 1941 and thereafter the Smiths and the Browns and all those who operate the textile mills of today will put to good use the heritage of the Johnsons of yesterday.

A word about the old Johnson mill: The stone building on the left was built in 1680, originally a grist mill. About 1785 it became a woolen mill, and in 1790 (just 150 years ago) John Johnson advertised "Dyeing and Fulling" and by so doing became the first commercial dyer in Newark and probably the first in New Jersey. The picture appeared in "Historic Newark," and is reproduced here by courtesy of Perry Walton, Boston.

Charles H. Clark's Service

Charles H. Clark's resignation as secretary of the U. S. Institute for Textile Research, due to ill health, is a source of regret to the whole industry, but particularly to this publication, of which Mr. Clark was for many years the editor.

Since 1930 he has carried on a difficult job in the Institute. Funds were scarce; the Textile Foundation was making its start during the same years, and the existence of its fund was used to some extent as "sales resistance" by those who should have contributed to the Institute's support; and, at best, the sale of research to textile men is hardly a pushover.

Despite these obstacles, the Institute is today a going concern, with a membership made up of many research-minded men; and with several cooperative projects either completed or in progress. More important still, it represents a potential factor in the development of a broader research program which is bound to come in the future.

For these reasons, the industry owes Mr. Clark a debt of gratitude. His many friends wish for him a speedy recovery.

In This Issue

GENERAL

A Good Time *May* Be Had by All 41
Defense Program Nears Completion for Fiscal Year 44
Fashion: A Rose Between Two Thorns 49
U. S. Research Conference Overflows 57
To Buy or Not to Buy Puzzles Purchasing Agents 62
Correct Roll-Covering Practice 64
Flammability of Fibers 69
Textile Brushes 73
General-Purpose Polyphase Motors 74
Simple Plate Drill Jig 86
World's Smallest Power Loom? 87
Chafing Along Selvages 92

PUBLIC RELATIONS

What of Labor? 42
Check List of F.T.C. Textile Taboos 50
Reducing Accidents by Employee Cooperation 70
Wage-Hour Law Analyzed by Charlotte S.T.A. 90
Textile Personalities 97

COTTON

Vat Dyeing Khaki Cloth—Short Cuts 46
National Unity, Sane Operation Urged by A. G. Myers 52
Print Cloth Case Ends—Nolo Contendere 54
Automatic Weft Straighteners at Riverside and Dan River 58
N. C. Yarn Men Play at Pinehurst 63
Cotton Machinery Lubrication 67
Cotton Heavy-Goods Loom 73
Repairing Broken Dents 86
Reducing Idle Loom Time 88
Alabama Operating Executives Meet at Auburn 89
Loomfixers' Manual—Cotton 94
Staple Cotton Fabrics 96
Cotton Mill News 120

WOOL

Fabrics for Defense—Worsted Shirting 48
Fluorescent Lighting Installation at Uxbridge Worsted 60
Woolen-Card Operation for Quality Work .. 87
Wool Overseers Annual—Fred Graichen, president 90
Labeling Under New Wool Act 91
Cockling of Tropical Worsteds 91
Finishing Knitted Overcoating 91
Loomfixers' Manual—Wool 93
Wool Mill News 122

RAYON & SILK

Nation Rayon Weavers Meet and Elect 56
Headless Package Twisting at Atlantic Rayon Corp. 59
Waxing Sewing Threads 68
Up-Twister 74
Shiny Lines in Silk Crepe 91
Ribbon Curls 91
Carding Short Staple Fiber 91
Rayon and Silk Mill News 124

KNITTING

Fabrics for Defense—Sweaters 48
Hosiery Fair Practice Rules Get a Hearing ... 56
Fixing Hosiery Machines—Full-Fashioned 71
Fixing Hosiery Machines—Circular 72
Automatic Knitting-Cone Winder 73
Conditioning Oils for Nylon Hosiery Yarn ... 76
Finishing Knitted Overcoating 91
Knitting Mill News 124

PROCESSING

Vat Dyeing Khaki Cloth 46
Norwich Plant of U. S. Finishing Finishes 100 Years 55
Aridye Printing Process Makes Notable Advances 66
Waxing Sewing Threads 68
Special Heavy Two-Roll Padder 75
New Dyes and Chemicals 76
Back-Filling Formula 92
Finishing Plant News 126

From the Editor's Mail-Bag

"Despite the Bombings"

BRIGHTON, ENGLAND

Editor, TEXTILE WORLD:

Referring to the interesting article "Dawn of the Day of Nylon" in February *Reader's Digest*, condensed from January TEXTILE WORLD, I would be extremely obliged if you could kindly put me in touch with the makers so that I can become primed with fuller particulars of this new commodity. Despite the bombings your article was most absorbing.

L. SWEETMAN

From the Technologists

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

Please permit me on behalf of the members of the A.A.T.T. to thank you for your warm and generous editorial on "Textile Preparedness for National Defense" which you have so neatly tied in with our meeting at the Hotel Commodore. Your generous support, I am sure, has added greatly to the technologists' group in assisting to do their bit. It is true we have started to function along these lines of preparedness and hope that future continuation of these activities will warrant our importance as a group as you have so ably described.

CARL C. MATTMANN, JR.
President, American Association of Textile Technologists

"None More Sprightly"

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

Of the many reviews I have read about my latest little book,* may I say that not one of them has impressed me as more sprightly, original, pointed than yours.

B. C. FORBES,
B. C. Forbes Publishing Co.

* "Little Bits About Men."

Re: The November Issue

(A Sample Comment)

"The November number of TEXTILE WORLD has just come to my desk. Congratulations on a superior job of presentation. I am particularly attracted by the nicely arranged check list which accompanies each of the articles in the special section which certainly personalizes and sums up the information presented in a very beautiful fashion. All in all the issue is one of which you can very well be proud and on which the entire staff should be complimented." —*E. R. Schwarz*, Professor of Textile Technology, M. I. T.

The Textile Defense Balance-Sheet

Calls for present fiscal year practically completed—Outlook for next fiscal year

McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos Carter Field
Robert Colborn M. G. Maury

By BLAINE STUBBLEFIELD

WHAT COMES AFTER the current textile procurement deluge? Unofficially, this is the program: The Quartermaster is now working on textile estimates which will be presented to Congress, with the annual Army budget, shortly after it convenes Jan. 3. Chances are that textile procurement in the fiscal 1942 will be somewhere near two-thirds the size of that of the fiscal year 1941.

June 30 ends the Army's fiscal 1941 clothing and equippage buying program. Just under $400,000,000 have been spent or committed by the Quartermaster for C & E, mostly textiles. There will be few if any more large calls—only fill-ins now and then—till the July new-year.

In making the 1941 estimate, sources point out that the Army is outfitting a force of 1,500,000 men; that, though the present procurement consists largely of initial clothing and equippage, replacements for the regular Army and more initial stuff for trainees will go right on. Incidentally, trainees will be permitted to retain one outfit of clothing in which to go home. Other outer clothing in their possession will be turned in, renovated and re-issued.

The "two-thirds" estimate for 1941 is to cover the normal needs of planned military forces. But you may be sure that the Quartermaster will try again, when its officers appear before appropriations committees next year, to get money for the storage of large quantities of wool cloth, and other non-perishable, critical supplies against any unforeseen emergency. Though QM has failed to sell this idea ever since the World War, things are different now, and it might succeed. If so, that's one thing that would put the 1942 program much higher than the estimate. Another thing that would do it would be a turn of world events which would cause the United States to fire up a full head of military steam, meaning millions of men in uniform.

While these forecasts derive from good authority, they are unofficial, and readers are advised not to base any commitments on them until after Congress has acted. The notion that defense textile procurement will be continued on a big scale is discounted to some extent by the Defense Commission's own announcement that: "It also should be remembered that future requirements of the Army for woolen goods are expected to be much smaller than the current buying program. In the present situation it was necessary to provide complete initial equipment as well as subsistence and reserve stocks for the entire Army in training, while in future it will be necessary to provide only for replacement of articles as they wear out." The writer can point out here, however, that it is not the Commission's business to know or predict what the Army will need. One might inquire too, what the Commission means by "much smaller."

STAR PERFORMERS in the last big scenes of the present show, of course, are the Army's calls for a balance of 13,265,000 yd. of wool cloth to fill out this fiscal year, and for the famous 20,000,000 yd. of 8.2 oz. khaki cloth, still only partly filled as this was written.

Consider first the Army's announcement of calls for 13,265,000 yd. of wool cloth. Some officers admitted that the advance notice of the end of the big party might be a damper on the industry spirit. But they said that elimination of doubt in the trade, and the establishment of a basis on which to make plans for supplying the Services and the civil market, would more than offset any bad effect. It is the practice of the Quartermaster, they said, to allow all the time possible in all its procurement, for minimum disturbance in the economic routine of the country.

To that same end, the terms of the invitation require no deliveries before March and will allow manufacturers to spread deliveries at the rate of 20% per month until Aug. 1, next year. This will permit the inclusion, to a large extent, of next spring's clip in the Service orders. The invitation calls for 5,750,000 yd. of 18-oz. serge; 2,000,000 yd. of 30-oz. melton; 2,100,000 yd. of 10½-oz. o.d. shirting flannel; 90,000 yd. of 18-oz. elastique; and for the CCC boys, 2,225,000 yd. of 20-oz. green suiting and 1,000,000 yd. of 30-oz. melton spruce green.

Textiles and Their Products Delivered or on Order for the Army June 30 to Dec. 1.

Blankets, wool	4,316,000	
Breeches, cotton khaki	227,000	
Breeches, wool	552,000	
Cloth, cotton herringbone twill	4,600,000	yd.
Cloth, cotton khaki, 8.2 oz.	36,919,000	yd.
Cloth, overcoat, 32 oz.	5,883,000	yd.
Cloth, shirting, wool	13,600,000	yd.
Cloth, wool, 18 oz.	17,600,000	yd.
Coats, mackinaw	207,000	
Coats, wool serge, uniform	1,309,000	
Coats, working denim	2,874,000	
Comforters, cotton & wool	1,268,000	
Covers, mattress	1,643,000	
Drawers, cotton short	5,155,000	
Drawers, wool	3,220,000	
Duck tentage, cotton, o.d. light	3,450,000	yd.
Duck tentage, medium, o.d.	6,547,000	yd.
Duck tentage, heavy, o.d.	19,396,000	yd.
Handkerchiefs	5,005,000	
Hats, work denim	1,700,000	
Leggings, canvas dismounted	1,550,000	
Mattresses, cotton	1,379,000	
Neckties	4,200,000	
Overcoats, wool	3,130,000	
Pillows, feather	1,200,000	
Pillow cases	2,626,000	
Raincoats	1,784,000	
Rolls, bed	20,000	
Shirts, cotton khaki	926,000	
Shirts, wool	2,000,000	
Sheets	7,380,000	
Sox, cotton	14,000,000	pr.
Sox, wool	7,000,000	pr.
Suits, work, 1 pc herringbone or denim	945,000	
Tents, pyramidal	74,500	
Towels, hand, huck	5,200,000	
Towels, bath	1,500,000	
Trousers, bakers', cooks'	79,000	
Trousers, cotton khaki	1,300,000	
Trousers, wool	2,400,000	
Trousers, work, denim	2,800,000	
Undershirts, summer	4,200,000	
Undershirts, wool	3,550,000	

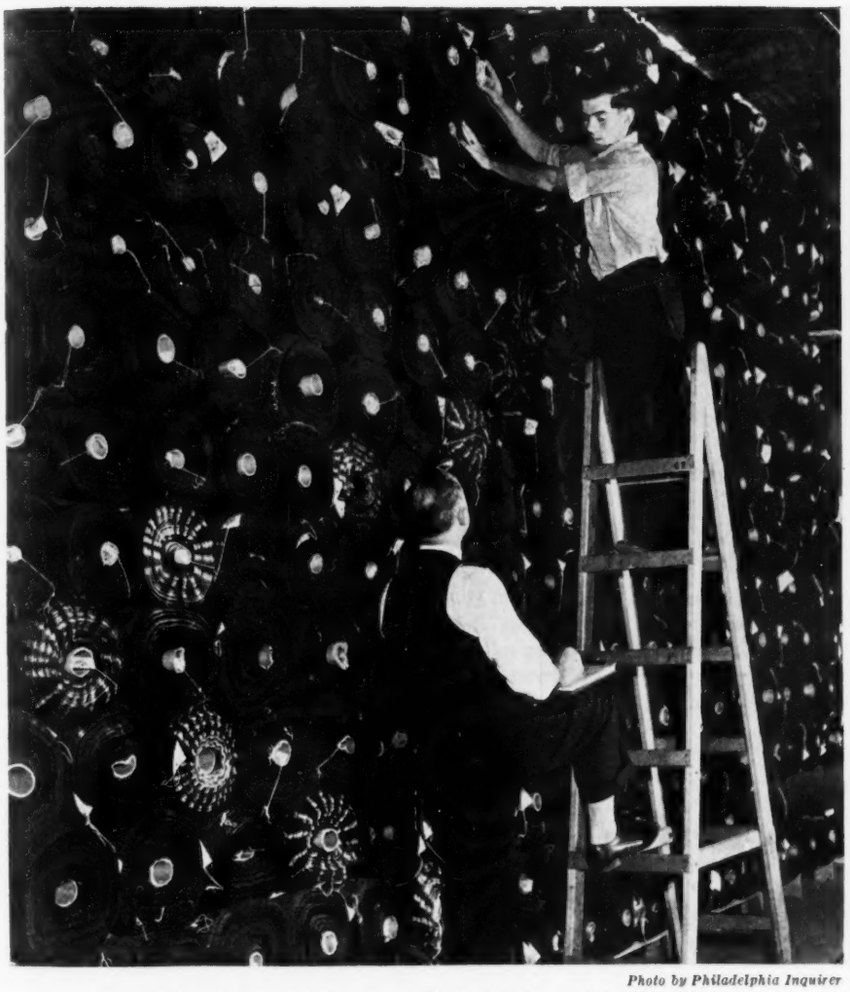


Photo by Philadelphia Inquirer

Pile of army fabrics at Philadelphia QM Depot

Removal of the ban on imported wool in Army contracts, which came 13 days before the big wool goods invitation, is expected to hold prices down as the Army hoped it would, and to increase the number of manufacturers who will bid. Another effect of the open door to foreign wool, whether it was premeditated or not, may be our purchase of considerably more wool from South America, with resulting improvement of the "good neighbor" situation. Several of the Latin countries, especially Argentina and Uruguay, have apparel wools very suitable to our needs. They also have the advantage of prices lower than ours. Indeed the story that Britain tried to tie up Argentine wool now simmers down to an alleged attempt by some members of the British trade to knock off a little velvet in a re-sale of Argentine fiber to U. S. dealers. Actually it is doubtful whether either the U. S. or Argentina would fall for that. In any event, the British government could not very well deal exclusively for Latin wool, because the South Americans want dollar exchange, which the U. S. has, and England hasn't. Of course other countries will be bidding against us for the wool, but most of them haven't got the gold in the pokes.

Speaking of British wool, the 250,000,000-lb. reserve stock from Australia and New Zealand for which storage was arranged in the United States, is beginning to come in. It is being placed in Custom bonded warehouses in Boston, New York, Philadelphia, and on the West coast, and possibly inland, with Denver as one possibility. Shipping, warehousing, and handling is in charge of the Defense Supplies Corp., an RFC subsidiary.

NOW, BACK TO THE matter of cotton khaki cloth. QM officials believe that the mills were not allowed enough time to compute costs and make sample pieces. They feel that the mills now have done their figuring and experimenting, and that they can supply the 11,000,000 yd. still wanted. They have decided that no further alternate weaves are necessary. It is their opinion that there are plenty of looms to make the cloth as specified.

There was talk some weeks ago that the Quartermaster would call for another large batch of khaki cloth on top of the 20,000,000-yd. request. This plan now has been abandoned as impracticable. QM makes no statements, but competent observers here agree that the call for so much of this fabric was ill-advised. Such over-demands have a tendency to spiral prices, which is just what the Defense Commission is trying to prevent. In fact, textile procurement is criticized in some non-Government quarters for alleged inadequate cooperation with the Defense Commission, which is prepared to furnish data on productive capacities.

Another big item under the head of cotton is tent duck. This is classed as equippage. Much equippage, which includes such things as cots, iron beds, and various kinds of webbing, once procured, lasts for years and replacements are comparatively small. But that's not so with tents. If they are in constant use, they last only a year, more or less. Thus it is desirable to figure on large replacements, as well as on the immediate large requirements.

QM is accordingly calling for large amounts of tentage, which offerings do not cover—as in the case of the 8.2-oz. khaki. Bids opened at Jeffersonville, on 8,500,000 yd. of single yarn, 10.25-oz. tent twill, showed scarcely more than half the amount had been offered.

The Army wants plied-yarn cotton duck very badly. Officers explain its points of superiority over flat duck: (1) it does not tear so easily; (2) it does not need to be sized before weaving, hence does not require desizing by the mill, and is less disposed to mildew. Quartermaster would like to see mills that have idle duck looms, or looms that could be used for duck, put into use, even if it meant installation of additional twisting equipment. Presumably, though no statement could be obtained, the Army might consider without prejudice any reasonable bids which took into consideration the cost of such additional equipment.

There are several recent developments at the Philadelphia QM Depot which, in addition to its big procurement job, runs the Army's garment factory and textile laboratory. Invitations have gone out for 580,000 of the new field jackets made of wind-resisting cotton cloth, and for 420,000 to be cut from water-repellant cloth. . . . The Depot at Fort Mason, San Francisco, is getting the first of a lot of 200 to 300 reversible wind-resistant parkas (with hood to pull over the head), which are o.d. on one side and white on the other. The idea, of course, is to permit camouflage in the snow. Fabric is cotton, medium light weight, about 5 oz. The parka is especially suitable for Alaska. . . . There's something new in fabrics for neckties, but not for publication yet.

Vat Dyeing Khaki

Short cuts in processing to meet the huge demand and call for quick delivery

By WINN W. CHASE
Associate Editor, Textile World

THE ARMY'S DEMAND since last May for a total of 47,000,000 yd. of vat-dyed 8.2-oz. cotton twill for shirts and uniforms has caused numerous headaches in the textile industry. Among the sufferers are the men who are being called upon to dye this material to the strict specifications set by the Government. To ease the shock, when it called for bids to be opened Nov. 5 on 20,000,000 yd. of the cloth, the Quartermaster Corps offered three alternative specifications as regards fabric construction. But there are no alternatives as regards color and fastness requirements.

The basic specification (See TEXTILE WORLD, September, 1940, pg. 68) called for an 8.2-oz. four-harness twill with combed two-ply warp and filling. The first alternative permits single combed yarn to be substituted for two-ply yarn in the filling. The second alternative permits either single- or two-ply combed peeler in both warp and filling. The third alternative calls for single- or two-ply combed peeler in the warp and permits either single or two-ply carded yarn in the filling; weight per square yard is 8.5 oz. instead of 8.2 oz. For all constructions it is specified that the color shall be an approved shade of khaki and that the cloth shall be evenly dyed with vat dyes and shall show good fastness to light, weather, laundering, and bleaching.

Due to its weight and construction, and the fastness requirements, this cotton uniform cloth is considerably more difficult to process than are many other types of fabrics. The large quantity required and the speed at which deliveries are wanted further complicate the problem.

Methods employed for preparing the cloth and for dyeing differ in detail in various plants, according to equipment available, machinery layout, and other local conditions. In the following discussion, therefore, no attempt is made to set down any hard-and-fast rules. The intention, rather, is to indicate typical procedures and to suggest precautions and short cuts which can be taken to prevent difficulties and to speed up production. The author wishes to acknowledge his indebtedness to the technicians employed by several of the leading dye manufacturers and to the mill dyers who have furnished certain of the data included in this article.

Proper preparation of the fabric is fully as important as is the dyeing process itself. To avoid breaking the twill, all operations must be carried out with the cloth at open width. To insure good penetration of the dyes, the fabric must be freed from all impurities and rendered as absorbent as possible. To meet the present fastness requirements, practically all dyers are now using the padder-jig method of dyeing, although one or two plants are trying to work out improved continuous dyeing processes which will give satisfactory results as regards fastness.

THE FIRST PRECAUTION to be taken is in sewing the pieces end-to-end in the gray room. Here a seam should be used which will minimize the possibility of seam marks on the dyed fabric. Usually a flat-butt seam is preferred.

The first step toward speeding up production is to combine singeing and desizing, if the latter is needed, into one continuous operation. After singeing or desizing, time is saved if the fabric is mercerized wet in the gray. Next the goods are scoured thoroughly. Although scouring can be carried out on the jig, time is saved if this operation is performed in a modified French boil-off machine or other suitable equipment.

The specification for the original 8.2-oz. fabric states that the cloth shall be bleached; however a light bleach carried out in conjunction with the scouring operation should be the most that is necessary with this particular fabric. The alternative fabric containing carded yarns may require a somewhat stronger bleaching to free it from motes. The final operation before dyeing is to dry the cloth and frame it to uniform width. In some plants, before it is dried and framed, the cloth is impregnated with a suitable wetting agent to promote better penetration of the padding liquor.

There are many combinations of two or, at the most, three dyes which can be used to produce the standard khaki color; and, by means of laboratory tests and a few trial runs, any competent dyer will be able to determine what particular combination will produce the most satisfactory results at the lowest cost. All the leading manufacturers of vat dyes have developed basic formulas which can be modified slightly to meet individual plant conditions, and their suggestions as to formulas and methods of application are frequently of great value to the dyer.

A typical two-color combination consists of about 22 lb. of Brown G paste (C. I. 1152) and 3½ lb. of Khaki 2G paste (Prototype 122) to 100 gal. of water. One three-color formula consists of 21 lb. Brown G (C. I. 1152), 7¼ lb. Olive R (C. I. 1150), and 2¾ lb. Golden Orange G (C. I. 1096). Another consists of 22 lb. Brown G (C. I. 1152), 2 lb. Olive R (C. I. 1150), and ½ lb. Khaki 2G (Prototype 122). These and other suitable dyes are sold by various companies under their own brand names and most are available in either single-strength or double-strength pastes.

The dyes are thoroughly mixed with water, no carrying agent being necessary with the highly dispersed vat dyes now available. If desired, as much as 750 gal. of padding liquor can be made up at once, since no precipitation of color particles will occur within 4 hr.

The type of padder employed and speed at which it is operated are governed largely by the equipment available and the preference of the dyer. Properly designed machines will permit cloth speeds of 120 to 150 yd. per min., or even higher. To insure uniform results, the padding operation should be standardized. Measuring or weighing of the dyes and preparation of the padding liquor should always be carried out in the same manner.

A constant liquid level should be maintained in the padder, and pressure on squeeze rolls should always be the same. Cloth speed should be constant. Temperature is not critical, but it is advisable to standardize on some one temperature. This can well be the same temperature as that of the subsequent reducing bath—in the case of all the formulas given above, 140° F. Splashing back of liquor at seams has caused trouble in some plants, but properly designed padders and flat butted seams eliminate this.

REDUCTION. After padding, the cloth, without drying, is transferred to the jig for reduction and subsequent oxidation of the color. Here again, the exact procedure followed varies considerably in different plants. And it is here that most careful control is essential. The jigs, themselves, should be of Monel

metal or stainless steel. A plentiful supply of soft water should be provided, as hard water may prove troublesome. Size of cloth rolls should be standardized and should be as large as possible in order to obtain highest production—with 8.2-oz. or 8.5-oz. cloth, the maximum size of roll will be 550 or 600 yd.

Usual practice is to run on the cloth with the jig empty, fill the jig nearly to the top with warm water, add one-half amount of caustic and sodium hydrosulphite needed for reduction, bring solution to proper temperature, give cloth one end, add water to bring bath to original volume, add other half of caustic and hydrosulphite, and give cloth three to five more ends to complete reduction. Some dyers prefer to give one end through caustic alone, adding the hydrosulphite on the second and third ends. The temperature of the reducing bath and the amount of caustic and hydrosulphite needed depend on the dyes employed. For the dyes used in the typical formulas given above, a reducing temperature of 140° F. is recommended; and 6 lb. of caustic and 6 lb. of hydrosulphite for a 100-gal. bath. While the formula is being established, it may be necessary, of course, to add reduced dye to the bath at the end of the fourth and fifth ends, say, to obtain the exact shade. After the formula has been established and the dyeing procedure standardized, additions of this sort should not be needed.

Immediately after the fourth or sixth end has been completed, and while the cloth is running from beam to beam (or is allowed to swing), the plug is pulled, the spent reducing solution emptied into the sewer, and cold water run into the jig. After the cloth has had two ends in cold water, the temperature is raised to 140° F. and 1¾ lb. sodium bichromate and 3 lb. acetic acid (56%) are added at the beginning of each of the next two ends. Oxidation is usually completed in two ends, but four may be necessary. The temperature of the oxidizing bath is not critical, and can be above or below 140° F. as long as it is uniform in all the jigs; however, if padding, reducing, and oxidizing all are carried out at the same temperature, there is less chance of an error on the part of the operatives. When oxidation is complete, the cloth is shelled up through hot water and taken to a continuous open-width soaper, where it is rinsed in hot water, soaped at the boil, to develop the shade, and again rinsed before drying and finishing. To obtain maximum fastness, at least three boxes of the soaper should contain 3 lb. of soap to each 100 gal. or one of the newer synthetic detergents of the free-rinsing type specially recommended for this purpose. Soaping can, of course, be carried out on the jig, but that method is time-consuming.

Photo by U. S. Army Signal Corps

Vast quantities of vat-dyed khaki cloth have been ordered for summer uniforms

As the treatment of the fabric on the jig consumes a very high percentage of the total time required for dyeing, every effort should be made to speed up this part of the operation. Having determined the smallest number of ends required, the dyer then should make certain that there will be no unnecessary delays. This calls first for proper scheduling of the work so that jigs will not be idle because of lack of padded material. Next a system should be devised for supplying all chemicals to the jigs as soon as they are needed and in form of pre-prepared solutions. For example, while a jig hand is running the cloth on to his set of jigs, a drug room clerk should make up a concentrated solution of caustic and hydrosulphite and deliver it to the jigs, a separate pail or other container being used for each machine.

A little study will show the number of jigs which one operative can tend with maximum efficiency. With relatively short rolls of 550 to 600 yd., the number probably will not be over three, although at least one plant is now assigning four jigs to one man. Other plants, because of agreements with the union, may be limited to two. It may be found that an additional helper for each 12 or 24 jigs will be worth while.

The jig hands assigned to vat-color work should be the most skillful and most conscientious in the dyehouse. They should be impressed with the importance of treating each roll in exactly the same way. If possible, the jigs should be fitted with temperature control instruments, as these will do much to insure uniformity of treatment. If this cannot be done, the operatives should be supplied with reliable thermometers and with measuring sticks for gaging the volume of liquor in the jigs. Likewise they should be instructed to keep the selvages as straight as possible when running the rolls on to the jig.

If dyes other than those mentioned in the above formulas are used, the manufacturer should be consulted to determine the proper caustic and hydrosulphite concentration. A small excess of hydrosulphite over the amount used by actual reduction of the dye and air oxidation is desirable. The reducing bath should be tested with Indanthrene Yellow paper following the third and each subsequent end; if the paper does not turn blue within 3 sec., 1 lb. of hydrosulphite should be added immediately. Likewise, the alkalinity of the bath should be tested with phenolpthalein paper or, preferably, Clayton Yellow paper; if the bath does not show an alkaline reaction, 1 lb. of caustic should be added to correct the condition. With some dyes, addition of a small amount of glue or other retarding agent is advantageous; this point also can be checked with the dye manufacturer, as can the advisability of using glauber salt.

With standardization and careful control of each step in the padder-jig method, the uniform results essential to meet Government specifications can be obtained. There is no doubt, however, that development of a continuous method which would yield shades of sufficient fastness would permit much speedier production of the khaki cloth which is in such demand by the Army.

Fabrics For National Defense

Worsted shirting fabrics and pullover sweaters are among the Army's needs

IN 1917-18 our Army didn't have the 10½-oz. worsted shirting fabric of which the Quartermaster is now ordering large quantities—to be exact, 1,800,000 yd. so far. Since this is one of the newer fabrics for national defense, the condensation of the specification No. 8-110, which covers it, and the other information given below, should prove well worth studying.

Stock—Fleece or pulled wool, not lower than 60s grade.

Yarns—Both warp and filling to be 2-ply, and spun on worsted system. [Although not stated in the specification, use of 2/17.9 typp (2/32 worsted system) warp and filling will yield a fabric of approximately correct weight. Use of 2/21.3 typp (2/38 worsted system) yarns for both warp and filling, with increased ends and picks per inch, will produce a cloth of similar weight.]

Color—Olive drab, produced by blending olive and white wools. Must show good fastness to weather and laundering.

Minimum Physical Requirements—Finished width, 56 in.; weight, per linear yard, 10½ oz. ± ½ oz.; ends and picks, finished, 52x42. [Although not stated in the specification, using 2/17.9 typp yarns, 2,950 warp ends reeded 4 per dent in an 11-dent reed 67 in. wide, and 41 picks per in. at the loom, will yield approximately correct finished cloth. Use of 2/21.3 typp yarns will require 3,360 warp ends reeded 4 per dent in a 12½-dent reed 67 in. wide, and 47 picks per in. at the loom.] Breaking strength, finished fabric, 1x1x3 grab method; warp, 68 lb.; filling, 54 lb. Weave, plain. Shrinkage of finished fabric, not over 4% warpwise, and not to less than 56 in. in width, fillingwise. Cloth must have good resistance to creping or crinkling in laundering.

Finish—Thorough scouring; clear, closely sheared, well pressed face. Use of weight- or strength-increasing materials prohibited. Pieces 50 yd. in length.

A NEW TEXTILE specification for Army use, promulgated within the last 60 days, covers olive-drab, sleeveless sweaters. It is expected large quantities of these garments will be ordered. A digest of the tentative specification relating to these sweaters follows:

Type—Jersey-knit, crew neck, pullover, sleeveless, wool sweaters.

Stock—Fleece or pulled wool, not lower than 50s grade.

Yarn—2-ply, spun on worsted system. [Although not stated in the specification, yarn of approximately 2/11.2 typp (2/20 worsted system) should yield an approximately correct fabric, although slight variation of yarn size may be necessary to obtain the exact required weight.]

Color—Yarn to be chrome-dyed olive-drab. Samples must show good fastness to laundering, and to weathering test consisting of 10 days exposure.

Construction—Body: 3 ends of 2-ply yarn, jersey stitch, not less than 6 wales and 10 courses per in. May be circular without seams; or cut, sewn, and seamed on both sides. Not less than 14 needles increase for each increase in size. Skirt: 3 ends of 2-ply yarn, 2x2 rib stitch, not less than 5 wales and 10 courses per in. Knitted, looped, or hand sewn to body, and finished 3½ in. in length. [Although not stated in the specification, these sweaters could be produced either on a 4½-cut latch-needle machine, or an 8-gage spring-needle machine.] Each sweater must have 2¾x1½-in. label, containing certain specified information.

This is the fifth article in a series designed to present helpful data on fabrics for national defense. For those who may have overlooked some installments, the following index lists fabrics previously discussed, and gives month of issue: Blankets, woolen—Oct.; Duck, cotton, 7.9 oz., 9.85 oz., 10.2 oz., and 15½ oz.—Nov.; Lining cloth, woolen, knitted—Oct.; Serge, wool and rayon, 18 oz., and worsted, 18 oz.—Aug.; Shirting, wool and rayon, 10½ oz.—Aug.; Twill, herringbone, 8.5 oz., uniform, 8.2 oz.—Sept.; Undershirts, sleeveless, summer—Aug.

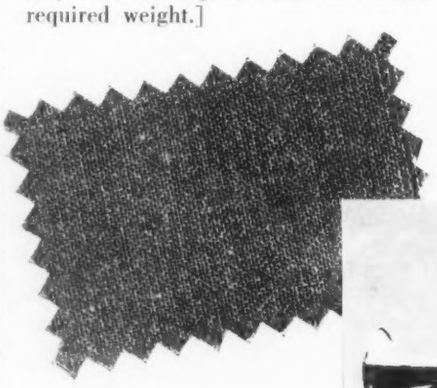


Fig. 1. 10½-oz. worsted shirting

Fig. 2. Soldier wearing shirt of worsted fabric now used by Army

Minimum Physical Requirements for Sweater—

Size	34	36	38	40	42	44	46	Tolerance
Width	15	16	17	18	19	20	21	±¼
Body length	25	25	26	26	27	27	28	±½
Armhole length	8½	8½	8½	9	9	9½	9½	±¼
Shoulder width	3	3½	3½	3½	3½	4	4	±¼
Lb. per doz.	5	5½	6	6¾	7½	8¾	9	± 5%

Fashion: Rose Between Two Thorns

American habit of cheap imitation on one side, and defense stringencies on other

H. STANLEY MARCUS — a crackerjack retailer from down Dallas way—had a good deal to say recently in *Fortune* on the subject "America Is in Fashion." He started out by saying: "When Paris fell, the three-billion-dollar American garment industry lost its source of inspiration and must now design for a living." "Must design for a living" is putting it mildly. "America must design *to* live"—so spoke Leo M. Cherne, at a recent luncheon of the Fashion Group in New York. This linking of our fashion prestige with the defense program adds an important thought for textile mills to consider in connection with available fibers and machines which situation has been frequently analysed in these columns recently.

About 150 years ago was an era of eccentric fashion. "Fortune" which reproduces these examples from an old French work, comments that Seventh Avenue would have a hard time making them for $11. Nicknames such as "Les Incroyables" and "Les Merveilleuses" were applied to the extremists in bizarre clothing.

Mr. Marcus gives us a clear picture of the fast-moving fashion scene as it functioned when Paris was at the helm and goes on to ask "What does Seventh Avenue face now? For not only must it create designs for dresses, it must find its own inspiration for new materials and then weave them; it must devise its own buckles, invent new buttons, trimmings, and beads, and see them translated into actuality." Seventh Avenue is alone—alone with the Paris prestige bugaboo lurking behind Nazi skirts, waiting for the time to come when her light will shine again.

If economic conditions permit, Mr. Marcus may be right in saying, "It will take several years for the influence of Paris to thin out of the blood stream of American design. Only then can we properly appraise the true creative ability of our American designers."

On the other hand, if America is to have no opportunity to play with unlimited fibers, thousands of colors, uncontrolled fabrics, millions of garments —then Mr. Cherne may be right in saying that "tomorrow's job will be to select and create from the fabrics and materials that the Government allows." Under these conditions American designers would be put to the test of designing without precedent — without help—without, at a possible last extremity, adequate materials. They would then be put to the supreme task of designing "something from nothing."

Today, our creative designers are finding that former prejudices against native talent have crumbled and that they are getting real cooperation from fabric manufacturers and stores. They are grateful for the efforts being made to bring about some sort of legal protection against style piracy.

Sylvan Stroock, manufacturer of fine woolens, has done much within the last few weeks to emphasize the availability of high-style fabrics in America. As Mr. Marcus so aptly states, "It is generally agreed that American mills are responsible for the high quality of today's rayons, and many American woolens are of impeccable fineness. The weakness of American fabrics lies not so much in technique as in subtle artistry."

FASHION ORIGINATION demands experimental fabrics. Until recently American textile houses had not done much to cooperate with dress designers in the creation of new and different fabrics. There are several reasons why. In the first place, there was no assurance of financial return. For another thing, designers resisted new fabric textures which were not "the rage of Paris." Was it because they didn't dare stick out their necks to introduce something new? Were they bound to their traditional reputations as "good adapters?" Mr. Marcus throws further light on the situation by reminding us: "There is yet another factor that has contributed to the weaver's reluctance to experiment and produce original fabrics, and that is the unethical conduct of his competitors. The weaver knows that no sooner has he put out a new fabric design than the market will break out in a rash of cheap imitations."

American women put a lot of faith in the stores and magazines that sponsor a style—probably more than they do in the originator. The American woman sets and maintains the fashion pace here. She cannot be overlooked. We are "psychologically ready to accept home talent—ready, in fact, to the point of hysteria."

But what of the possibility of a refocusing of public interest to national defense? The fashion business is a wasteful one and, as Mr. Cherne says, built on obsolescence and individuality —not durability and standardization. America at war might not have the plants and materials available for fashion on the grand scale which some are anticipating.

Lest this sound overly pessimistic, it might be well to point out that "she" —the American woman—will sacrifice much for her country—*but*, she will always desire beautiful clothes and will strive to have them as long as the law allows.

Check-List of F.T.C. Taboos

Textile advertising claims which Commission has found false or misleading

By NATHAN R. ABELSON

A CHECK-LIST of textile advertising claims to which the Federal Trade Commission has taken exception is here presented as a guide to manufacturers and advertisers of textiles in preparation of their copy.

The Federal Trade Commission Act, passed in 1914, was an attempt to eliminate unethical and unfair trade practices in business. The Commission, through lack of power and jurisdiction, found itself unable to make much headway in its efforts prior to the Wheeler-Lea Amendment, passed in March 1938, which not only outlaws unfair methods of competition but also "unfair or deceptive acts or practices in commerce."

The act is now a strong Federal law against false advertising of any commodity or service; whereas previously prevention of such advertising was handicapped by the jurisdictional condition of proof as to competitive injury.

Although the Wheeler-Lea Amendment was not aimed particularly at the textile industry, the F.T.C. has been having a field day among textile manufacturers and advertisers. In the two and a half years that this law has been in effect, stipulations with, and cease-and-desist orders against, alleged false and misleading advertising in this field, have been almost as numerous as those in the drug and cosmetic fields.

Even though the trade practice rules, formulated by various groups within the textile industry and approved by the F.T.C., have set certain standards, the Commission has found misuses of the English language in some advertising claims.

The check-list follows. In the reference numbers, "S" stands for "Stipulation," and "C" for "Cease-and-Desist Order."

HOSIERY

To cease

use of the words "Made in English Fashion," implying that the product is either an English product or is of a style and quality known to the trade and to the public as English ribbed hose. S. 2466.

use of the word "Cashmere," either alone or in connection with the word "finish," implying that the product is composed of or contains cashmere wool. S. 2320.

To cease representing that the product

is woven with a special lock-stitch which prevents it from snagging, running or developing holes.

will wear better and last longer than the hosiery manufactured or sold by competitors. C. 3379.

HOME SPUN

To cease

use of the word "Homespun" implying that the products are made from fabric or yarn spun or woven by hand or loom at home. S. 2244.

HAND LOOM

To cease use of the words

"Hand Loom" as descriptive of products manufactured from material not made on hand looms. S. 2859.

LINEN

To cease

use of the word "linen" as descriptive of products not composed of linen, a product of the flax plant.

use of the words "linen finished acetate" implying that the products are composed of linen. S. 2234.

use of the statement "Genuine Irish Linen Reinforced", implying that the product is composed of linen or of a predominating content of linen fiber reinforced by some other fiber. S. 2324.

use of the word "Linex" to describe products not made of the fiber of flax. S. 2562.

"LODEN" CLOTH

To cease representing that

any mill or plant located in that European territory known as the Tyrol is the sole producer of Tyrolean-woven Loden cloth.

Tyrolean-woven Loden cloth can be procured in the United States only through or from this company.

the water in the Tyrol gives Tyrolean-woven Loden cloth distinctive qualities which can not be obtained in Loden cloth produced elsewhere.

the company's Loden cloth is made wholly of Tyrolese wool unless the cloth is made wholly and exclusively from the wool of sheep grown in the Tyrol. S. 3696.

MATTRESS

To cease

use of the term "felt" when referring to any mattress which is not made of fibers of cotton or wool garnetted together into a mat or web.

use of the term "staple cotton" referring to any product which is not full-length fiber cotton.

To cease representing that the product

is made of or filled with cleaned cotton motes or washed cotton.

is felt-plated unless the mattresses have a layer of felt on their top and also on their underside. S. 3781.

METAL CLOTH

To cease

use of the words "metal cloth" describing products which are composed of fabrics woven wholly or in substantial part of threads of rayon. S. 2197.

NECKTIES

To cease representing that the product

is made from a fabric recently discovered by science.

will not stain or that every kind of stain can be removed without injuring the ties. S. 02483.

PATENTS

To cease

use of the statements "Protected by patents granted" or "Protected by patents pending" implying that the products are actually protected by existing patents. S. 2430.

QUILTS

To cease

use of the word "Down" implying that the products are composed of down. (If the quilts are composed in substantial part of down and in part of other fiber and the word "down" is used in advertising, then the word "down" shall be accompanied by some other word printed in equally conspicuous type indicating that the quilts are composed in part of a fiber other than down). S. 2346.

RAYON

To cease

use of the word "acetate" to designate a rayon product made by the acetate process, or of the words "Celanese" or "Bemberg" to designate, respectively, rayon products of the Celanese or Bemberg type unless the word "acetate" or "Celanese" or "Bemberg" is immediately accompanied by the word "rayon" printed in type equally as conspicuous as that in which the word "acetate", "Celanese" or "Bemberg" is printed, so as to indicate clearly that the product is composed of rayon. (Example: "Celanese Rayon", "Acetate Rayon." If the words "Taffeta", "Crepe", or "Velvet" are used to describe a product that is rayon, the products shall be designated as "Rayon Taffeta" "Rayon Crepe" and "Rayon Velvet"). S. 2234, 2269, 2318, 2316.

REPRESENTING DISTRIBUTOR AS MANUFACTURER

To cease

use of the words "Knitting Mills", "Knitting", or "Mills" implying that the corporation knits or makes the products or that it actually owns and operates the factory or plant in which the products are knitted or manufactured. S. 2293.

representing that the company is an importer, unless it directly imports from a foreign country a substantial portion of the products offered by the company. C. 3753.

SHRINKAGE

To cease

use of the term "Shrinkproof" or "Shrunk" or words of similar meaning implying that the products are proof against shrinking or have been fully shrunk to the extent that no residual shrinkage is left remaining in the products. [If the products have undergone a shrinking process and have been shrunk to a substantial extent but contain a certain amount of residual shrinkage, and the term "Shrunk" or other similar term is used to describe the product, then such term shall be immediately accompanied by some other word printed in equally conspicuous type to indicate clearly that there remains in the product a stated amount, percentage or percentages of residual shrinkage in both warp and filling or in warp or filling, whichever has the greater residual shrinkage. Example: "Shrunk"—will not shrink more than —% under Commercial Standard, C.S. 59-36". "These goods have been shrunk (or preshrunk) to the extent that residual shrinkage will not exceed —%, when tested in accordance with the recognized and approved standards or tests."] S. 2524.

SILK

To cease

use of the words "Shantung", "Moire Taffeta", "Satin", "Satin Taffeta", "Crepe", "All Silk", "Pure Dye", "Taffeta", "Silkool", "Velvet", "Pur'Di", "Genuine Pur'Di", "100% Pure Dye Crepe", "Pure Silk Filled", "Chiffon", "No weighting", "Unweighted", "Pure Silk", or any other words of the same meaning and import to describe products not composed wholly of silk, the product of the cocoon of the silk worm, unless, in the case of a fabric or product composed in part of silk and in part of materials other than silk, there is used in immediate connection and conjunction therewith, and in letters of at least equal size and conspicuousness, words clearly naming and disclosing the fiber or materials of which the product is composed, stated in the order of their predominance by weight, beginning with the largest constituent. (Example: "Silk and Rayon Satin" for a fabric of satin construction, composed of a mixture of rayon and pure silk, each present in substantial proportion, but with the silk predominant.) S. 2684, 2244, 2318, 2197, 2269, C. 3206, 3276, 3627, 3600, 3494.

use of a silk-connoting word as descriptive of the substantial silk content of a product, which silk content has been weighted or contains any metallic weighting; provided, however, that if the product is composed in substantial part of weighted silk and any silk-connoting word is used to refer to such weighted-silk content, then, the silk-connoting word shall be immediately accompanied by the word "weighted" or "weighting" printed in equally conspicuous type, together with the percentage of such weighting as, for example: "silk, weighted 45%", "silk with 45% metallic weighting"; and if the product is composed in part of rayon and in greater part of weighted silk, then in that case, advertising matter shall read for example: "silk (weighted 45%) and rayon." S. 2383.

VAT DYED

"When a textile material steeped in a liquor containing a dye is exposed to the air, the dye is reformed by oxidation and precipitated in the fiber. Dyes so used are called 'Vat Dyes.' Fabrics made of yarn dyed before woven are referred to as 'Yarn Dyed.' To the trade and the purchasing public the term 'Vat Dyed' connotes a superior quality of dye coloring which commands a much higher price for a product than if it were yarn dyed."

Thus, the company was ordered to cease representing that yarn dyed textile materials are "vat dyed" or in any other way passing off as "vat dyed" any goods or merchandise not actually dyed by the vat process. S. 2823.

WOOL

To cease

use of the words "Fleece", "Tweed", "Wool", "Wooly Warm", "All Wool", "Woolen", "Virgin Wool", "100% Virgin Wool", "Australian Wool", "Worsted" or "All Pure Wool Worsted" in describing the products, when such fabrics are not composed wholly of wool. (If the fabrics are composed in part of wool and in part of other materials, the above words may be used if there is used in immediate connection therewith, in letters of equal size and conspicuousness, words truthfully describing each constituent fiber or material in order of its predominance by weight, beginning with the largest single constituent, and provided that if any particular fiber in the fabrics is not present in a substantial part by weight, the percentage in which such fiber is present shall be specifically disclosed). C. 3638, 3753. S. 024181, 2721, 2498.

use of the words "wool", or "fleece" to describe any wool which is not virgin or unused wool. C. 3753, 3638.

use of the words "Mohair and Alpaca" in referring to the principal fabric in the product, when the fabric contains wool. S. 02418.

WORSTED

To cease

use of the word "worsted", either alone or in connection with the word "tropical" as descriptive of suits not composed of wool. (If the product is composed in substantial part of wool and in part of other material, and the word "worsted" is properly used as descriptive of such wool content, then the word "worsted" shall be immediately accompanied by some other word printed in equally conspicuous type, indicating clearly that the prodact is not wholly of worsted. S. 2331.

National Unity, Sane Operation

Urged by A. G. Myers at North Carolina Convention; W. H. Entwistle, new president

URGING NATIONAL UNITY and sane operation, A. G. Myers, of Gastonia, N. C., retiring president of the North Carolina Cotton Manufacturers Association, sounded the keynote of the group's annual convention at Pinehurst last month. This was further emphasized in an inspiring address on patriotism by Dr. Julian Miller, editor of the *Charlotte Observer*, and by a resolution pledging the association to work for national welfare and defense.

Highlights of Mr. Myers' address were as follows:

National Unity. "Whether he was your choice or not, he is our President—with emphasis on *our*—and it behooves us all to support him and lend the fullest cooperation in those matters making for a united front. . . . We must back our Government in every way possible in the national defense program, regardless of any sacrifices which may be entailed."

The War Boom. "Let us not be deceived into believing that present conditions will continue indefinitely, and if we would profit from past experience there will be no vast expansion in the textile industry in order to take care of this temporary emergency. Instead of expanding the producing capacity, if we are wise we will use such money as can be spared for modernizing and revamping those plants now in existence on which so little money has been spent during the last decade. . . . There are plants—while true they are mostly obsolete—located in the North and South which could be started up and put into production if profits in textile products should continue to increase. There is a danger of getting prices too high, and in so doing not only would it encourage expansion and glut the market with too much goods, but it could bring on a buyer's strike.

"Getting the Gavel" might have been the title of this picture, as the new president, W. H. Entwistle, received this token from retiring president Myers at the banquet

An early arrival was R. L. Cole, of Rockingham, treasurer of Hannah Pickett Mills, Inc.

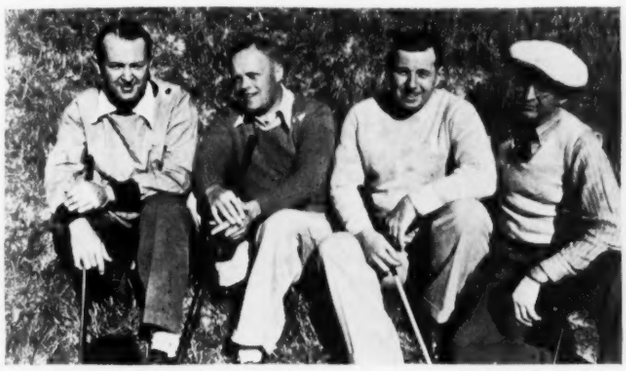
Competition From Synthetic Fibers. "Cotton is holding its own so far as natural fibers are concerned. However, the real red light shows when we come to the synthetic fibers. Whereas, cotton increased approximately 25% in the first nine months of 1940 against the same period of 1923–1925 average, rayon increased 11 times, or 1100%. . . . Unless the cotton industry spends more money on research and exploitation there can be but one answer. . . . Millions of dollars are being spent by the producers of synthetic fibers in research and advertising, but it is nothing short of a major operation to extract 2¢. per bale from the cotton mills on cotton consumed as a contribution to the Cotton-Textile Institute's fund for advertising cotton. Cotton-mill executives continue to grind out goods in volume, regardless of market conditions, of about the same style and character as was done 25, 40, and 50 years ago. . . . A contribution of 25¢ per bale on all cotton consumed would pay the mills handsomely if the aggregate sum thus raised were used in intelligent application of research and advertising."

Wages and Hours. "In times gone by there has been a great hue and cry that Federal laws governing hours of labor and wages were putting the textile industry out of business. Our Fed-

Left—"We must back our Government in every way possible"—asserted retiring president A. G. Myers. *Center*—Big Homer Orvis, New York cotton broker, grins as he signs the register. *Right*—"After spending a day in a veteran's hospital, I came away a better taxpayer!" soberly declared Dave Hall before presenting his tax report. "No price is too great for defense against wrecked bodies and souls"

"Lobby yarns" were spun by Secretary Mildred Barnwell and President Stuart W. Cramer, Southern Combed Yarn Spinners Assn.

A happy family group from Statesville—Bill Suttenfield with his charming wife and daughter



Plenty of peddlers played at pitching and putting at Pinehurst—or perhaps Peter Piper picked a peck of pickled peppers; "Doc" Berlinghof, American Monorail Co.; Ted Wohlbruck, Jr., Dictaphone Corp.; Bob Ashworth, of Ashworth Bros.; Ben Davis, Southern Standard Mill Supply Co.

Quiet enjoyment at these occasions is always registered by J. Ed. Millis (center), president of Adams-Millis Corp. His companions are W. W. Heston, American Mutual Life Insurance Co. (left), and R. W. Cordon, assistant secretary of Manufacturers Trust Co., New York

eral laws are not perfect, but I am of the opinion that a Federal law, fairly administered, governing hours and wages for the textile industry as a whole is much more to be desired than the laws passed by the States individually. It is my opinion that the present scale of wages paid by the mills and the man-hours operated are eminently fair to both employer and employee."

Mill Villages. "Inequalities with other sections by reason of the mills owning villages for which they are not getting an adequate return in the way of rents could be easily corrected by charging a rate for rent and other services furnished which would cover these costs and at the same time return a reasonable interest on the investment. Many mills have found it desirable to sell their tenements to the employees at reasonable prices and on easy terms, and those mills which have done this are highly pleased with their experience. The property owner makes for a more efficient worker and a better citizen in the community."

THE BUSINESS SESSION of the convention covered the year's diversified activities and elected a slate of officers:

Committee Reports. Taxation — R. D. Hall, Belmont, and Richard E. Thigpen, Charlotte; Safety Contest—Marion W. Heiss, Greensboro; Membership—D. A. Long, Jr., Thomasville; Traffic—F. J. Haywood, Concord; Cotton—William Cannon substituting for Charles A. Cannon, Kannapolis; Legislative—Herman Cone, Greensboro; Finance—Harvey W. Moore, Concord; Resolutions—W. H. Ruffin, Durham.

In presenting the awards to the winners of the annual safety contest,

Among the golfers were W. C. Appleton and H. L. Dalton

Clif Watson, of Emmons Loom Harness Co., and Bill Moore, the "Barrelled Sunlight man" from Lynchburg, Va.

Marion Heiss pointed out that compensation insurance rates have dropped from 82¢ in 1929 to 60¢ in 1940. Safety contest winners were Erwin Cotton Mills Co. (No. 6 Plant), Greensboro Weaving Co., Roxboro Cotton Mills (Longhurst Plant), Mooresville Cotton Mills (No. 4 Plant).

New officers. William H. Entwistle, vice-president and general manager of Entwistle Mfg. Co., Rockingham, was elected president. W. H. Ruffin, secretary and assistant treasurer, Erwin Cotton Mills Co., Durham, became first vice-president; Ellison A. Smythe, 3rd, president, Balfour Mills, Hendersonville, was named second vice-president. Hunter Marshall, of Charlotte, was re-elected secretary and treasurer. Directors for term expiring in 1943 are Don S. Holt, Herne Swink, Holmes Davis, Jr., R. D. Hall, Robert Cole and Carl Rudisill.

Sports prizes. At the banquet, J. D. Sandridge, director of the golf tournament, presented golf prizes as follows: Low net (Corn Products Refining Co. prize)—C. J. Beaver, 69; low gross—J. W. Hawthorn, 80; second low net was won by J. E. Millis and second low gross by W. H. Ruffin.

J. E. Moore, director of the Skeet shoot, presented first prize to R. C. Moore, second prize to Walter Gale, third to Harvey Moore, and fourth to Jim Sandridge. High score was made by J. E. Moore, but he was not competing.

Print Cloth Case Ends

THE FIVE MEMBERS of the "print cloth curtailment program committee," charged with violation of the Sherman anti-trust laws received nominal fines of $100 each following nolo contendere proceedings at Greenville, S. C., before Federal Judge Alva M. Lumpkin. In pronouncing the fines, Judge Lumpkin insisted that payment was in no way a penalty but was simply intended to meet technicalities of the law.

"Were I sitting on a jury," Judge Lumpkin stated before announcing the fines, "I would declare these men innocent of any violation of the law in this case, and I don't believe that any twelve men would find them guilty. Our mills in this section have often been troubled with overproduction when other businesses were doing well, and I do not believe it wrong to curtail in an orderly manner. When market conditions force the mills to shut down, the loss to labor alone is tremendous. We must try to consider local conditions in settling this case, and not something which happened in Oregon or elsewhere. Technically, there was a violation of the law, but the fine imposed will be of no benefit to the Government and no penalty on these men. However, orderly marketing must be done in a manner not to violate the Sherman anti-trust law, and consequently I am fining the defendants $100 each which I hope will satisfy both parties."

It was emphasized throughout the hearing that the industry committee does not consider itself guilty of violation of the law, but felt that by pleading nolo contendere, they could avoid a long-drawn out court trial which would keep the members away from their mills which in several instances are working on Government defense orders, requiring their personal attention. Charges of violation of the Sherman law were filed against the print cloth industry following announcement of a plan to curtail production by 25% for three months and to limit sales to current production during that period in an effort to stabilize a sick industry.

The committee of print cloth manufacturers, representing the entire industry in the matter, consisted of J. E. Sirrine, chairman, Fred W. Symmes, Ellison S. McKissick, John B. Harris and David W. Anderson.

Pleas of nolo contendere were also entered by four corporations and six executives of those companies to an indictment charging violation of the anti-trust laws in fixing prices on aircraft fabrics. The outcome of the trial, held in U. S. District Court in New York City, was the imposition of fines of $5,000 each on three of the corporations—Wellington Sears Co., Suncook Mills and Thurston Cutting Corp.—and a fine of $2,500 upon the other corporation, Air Associates, Inc. The six individuals were fined $1,000 each.

Wellington Sears Co., one of the defendants, stated after the trial that the settlement of the Government case against manufacturers of air-plane fabrics through the plea of nolo contendere seems to be in the public interest, avoiding the necessity of expense and litigation at a time when every effort is required to meet the demands of a strong national defense.

Nolo Contendere

(An Editorial)

FROM A PRACTICAL STANDPOINT, the termination of suits against two groups in the textile industry was a satisfactory outcome. By entering pleas of nolo contendere, the defendants admitted no violation of the anti-trust statutes, but at the same time prevented delays in the national defense program which would have resulted from prolonged trials. The defendants could better serve the public interest by devoting their time and attention to the production of goods required in the national emergency. The decision to refrain from fighting the indictments was a wise one.

But, from a long-range economic standpoint, the inconclusive result leaves a battle still to be fought.

Let us take the print-cloth case as an example of a problem which will still be with us, long after the defense program has become history.

A group of honest citizens got together to try to instill a little sanity into a situation which represented losses to the companies and instability of employment to the workers. They appointed as their leader a man who has always enjoyed the respect of both the industry and the public.

There was nothing secretive about their operations. They announced their intentions. Their chairman gave an interview to this writer at the very start, and outlined the plans of the group, without reservation. As a result, this publication carried a complete story of the program. Conspirators in restraint of trade would not thus advertise their intent.

Nor was there anything in the program which was designed to, or possibly could, impair the public interest. On the contrary, its successful prosecution could lead to only one outcome: a safeguarding of that public interest. Consumers never gain, but always lose, as a result of corporate losses in sick industries, and by the instability and unemployment which inevitably follow.

Despite this fact, the group of not only well-intentioned but actually public-spirited individuals found themselves facing possible prison-terms in Atlanta. From what we know of those individuals, they would have been willing to risk taking the rap. But the time was not ripe for a show-down. The defense program called.

We hope that a show-down of that sort will never be necessary. We hope that, to the many reforms hitherto made effective in adjusting ourselves to the growing-pains of a still growing economy, the essential revision of the anti-trust laws to prevent restraint of trade by *over-competition* as well as by *under-competition* will be added.

Pending that outcome, however, we hope that the administrative agencies endowed with the enforcement of those statutes will use a little common sense.

No sane man in the Department of Justice could have thought for a moment that the print-cloth manufacturers were guilty of anything.

And so, even if a technicality could be found, why waste public funds on it while racketeers, Fifth-Columnists, and other types of public criminals are at large?

National defense requires not only guns and airplanes and uniforms. It requires also an appreciation of the needs of the economic system which supplies all those implements. If that system fails, through lack of governmental understanding or through unfair governmental acts against the very men who are trying to maintain it, then national defense will fail.

If any bureaucrat or group of bureaucrats wants to accept the responsibility for such failure, they should stand up and be counted—now.

Otherwise, they themselves should immediately enter their own pleas of nolo contendere before the court of public opinion.—*Editor.*

Norwich Finishes Hundred Years

Many changes during first century of U. S. Finishing's largest unit

MOSES PIERCE really started something when in 1840 he set up shop at Norwich, Conn., for the bleaching and finishing of plain sheeting and clay bagging. For today, exactly 100 years later, that same Norwich plant is the largest unit of the United States Finishing Co.—one of the foremost companies in the dyeing, printing, and finishing industry. Ten years after its start, records indicate, the Norwich plant employed 35 men and had an annual capacity of 5,000,000 yd. Now, the parent company operates four units, employs 1,800 operatives, and can handle more than 200,000,000 yd. per year.

In variety of work done, the company has likewise grown. In 1840 it was "bleaching and finishing of plain sheetings and clay baggings." Today the roster of the company's abilities looks like a Who's Who—or more correctly a What's What—of the textile industry. It includes bleaching, dyeing, finishing, mercerizing, and printing of cotton, linen, rayon, spun rayon, and mixture fabrics.

In 1840, when the company first began operations, it was known as Norwich Finishing plant. By 1857 it had become a joint stock company known as Norwich Bleaching & Calendering Co. In 1882 printing was added, and the new company chartered as Norwich Bleaching, Calendering & Printing Co. In 1899, the company joined the United States Finishing Co. That company, as presently constituted, comprises two plants and two subsidiary companies. The plants are Norwich (Conn.) Branch, and Sterling (Conn.) Branch. The subsidiary companies are Queen Dyeing Co., Providence, R. I., and Hartsville (S. C.) Print & Dye Works.

The Norwich plant contains a wide range of equipment for handling diversified types of goods. The printing department, with sixteen machines ranging from one to fourteen colors, is capable of producing a wide variety of work. High-quality draperies of cotton, linen, rayon, and spun-rayon mixtures are handled in widths up to 50 in. The plant also prints rayon and fine cotton dress goods and Lastex fabrics for the swimsuit trade. Printing of handkerchiefs has been brought to a fine art in the last few years.

Old view of Norwich plant of U. S. Finishing Co.; this photo was taken in 1870

The Norwich plant also houses a complete and modernly equipped engraving department, where all the copper rollers for intricate multi-color drapery designs and fine-dress-goods patterns are produced by the company's own craftsmen. In addition, this unit of the company has a large dyeing capacity, processing a variety of cottons and rayons for many uses.

The main laboratories of the parent company are housed in this plant. In them many of the company's special finishes were developed. Although licensed to apply many processes under existing patents, such as Sanforizing, Sanforset, Tebelizing, Zelan, Everglaze, etc., the company itself has developed a number of finishes which have become well-known in the trade. Most outstanding among these is the Vitalized finish—a treatment designed to impart permanent body and resiliency to fabrics, particularly spun rayons, and to prevent sagging, slipping, and fuzzing. It is also applied to linens, cottons, spun rayons, and spun-rayon mixtures in combination with the Tebelized process for crease resistance. Among other finishes owned by United States Finishing Co. are Stabilized, for setting the original finish of the cloth, whether it be soft or crisp; Fiber-Loc, which reduces slippage in low-end satins; Vita-Fresh, designed to provide self-sterilization of fabric, to retard germ growth, and to impart odor resistance; and a permanent starchless finish for sheer cottons.

The Sterling plant of the company handles quantities of sportswear fabrics of spun rayon and spun mixtures, rayon linings for both men's and women's wear, and acetate taffetas and satins. The Queen Dyeing Co. originally produced black and white resist moleskins for the work clothing trade. As corduroys developed, the printing of these fabrics was added to this mill's specialties. During the last four or five years studies and successful experiments have been made with the result that today printed knit goods are an actuality. In addition to rayon underwear fabrics, the field has widened to include acetate rayon dress goods and upholstery fabrics. The Hartsville (S. C.) Print & Dye Works, acquired by the company in 1929 specializes on popular priced cotton dress goods and shirtings.

The various processes mentioned and described, as well as the company's regular services, are sold from headquarters at 40 Worth St., New York.

Rayon Weaving Outlook

Surveyed at meeting; Allen Barrows elected chairman; Pres. Dall's report

A GOOD, though highly competitive, year has been passed by the rayon weaving industry, and a favorable period lies ahead, according to reports presented at the eighth annual meeting of the National Rayon Weavers Association, at the Harvard Club, New York, Nov. 14.

Allan Barrows, of Gosnold Mills Corp., was elected chairman of the board; R. E. Henry, of Dunean Mills, first vice-president; Seabury Stanton, of Hathaway Mfg. Co., second vice-president. C. Whitney Dall was reelected president and secretary-treasurer.

"Increase in demand and production from one year to another is the rule, rather than the exception, in the rayon weaving industry," said Mr. Dall, in the president's annual address. "It should provide results which are satisfactory to buyer and seller alike. Yet, in the last year of modest expansion in demand, weavers were bidding against each other for orders to such an extent that prices not only did not advance, but declined almost steadily. For example, 2-ply alpacas, which sold in the fall of 1939 at 29-29¼¢, broke slowly to the 25¢ level current this October; pigment taffetas from 16¾-17¢ to 14-14¼¢. It is the old story of too much cloth being available and pressing for sale to make distribution at a reasonable profit at all possible. This matter lies in the hands of the individual weaver to correct."

President Dall reported the immediate outlook for the rayon weaving industry to be favorable as far as a substantial distribution of cloth at somewhat better prices than now prevail is concerned. "There is every indication," he said, "that through the huge Government expenditures, there will be an upswing in industry lasting from two to three years, with the possibility of a peak being reached some time in 1941, through increased purchasing power and a kind of war prosperity of an inflationary type, the reaction to which proves disastrous.

"There is, in the dress goods field, a place for one or more new fabrics which will attract consumer attention," he went on. "With the high price of wool, and the demand of the Government for wool for military supplies, there should be a greater opening in next season's operations for fabrics of the woolly type to take the place of light wool outerwear. There is also a distinct trend toward rugs and carpets made of spun rayon and carpet wool. Directly, however, this does not benefit rayon woven cloth. There is also the chance to develop really fine rayon fabrics, made for the Upper Crust trade, which formerly were imported from France. While the volume will not be large in such a line, there is a profitable field open to those mills which are able to create such fabrics.

"Thus, while rayon weavers may expect an active business in the coming year, the thoughts of the most serious of them will turn to what may happen when this armament boom ends, and what provisions will be made for employing those who will no longer be needed. At present there is, as a result of Government-Business relationship, a blackout on private initiative which blocks the industrial expansion which can take care of unemployment. The problem must not be allowed to go by default, as it is one which is perfectly possible of solution."

Hosiery Rules Hearing

HEARING ON THE PROPOSED Fair Trade Practice Rules for the Hosiery Industry was held Nov. 19 before Henry M. Miller, assistant director of trade practice conferences, of the Federal Trade Commission, in Washington. Changes recommended by the trade were principally in details.

This hearing culminated three years of effort on the part of the National Association of Hosiery Manufacturers to develop fair and equitable rules for the hosiery industry. Earl Constantine, president of that association, offered the industry's suggestions for amending or amplifying the rules, including adding a definition of Nylon, permitting use of "lisle" without the word "cotton," prescribing standard atmospheric conditions for test, simplifying certain procedures, etc. Taylor Durham of Southern Hosiery Manufacturers Association dealt with provisions particularly affecting cotton hosiery. It was also recommended that definition of "wool" conform with new "Wool Labeling Act." Charles P. Bloome, managing director of the Hosiery Protective Exchange, Philadelphia, stated that portions of the labeling procedure as proposed would place an undue burden on jobbers which should be borne entirely by the manufacturers. J. L. Mueller, of Real Silk Hosiery Mills, objected to the rule that the fiber content of hosiery should be named on at least one stocking of each pair. He felt that labeling the container of each pair of hose and selling each pair in a container would be more satisfactory.

Mrs. Mildred G. Barnwell, of the Southern Combed Yarn Spinners Association filed a brief setting forth two objections to the rules as proposed. First—opposition to the ruling that lisle yarn for hosiery be made of cotton from 1⅛" cotton or longer, and recommendation that the minimum staple length be set at 1⅛", and that it be made clear that the individual manufacturer be allowed the privilege of changing staples to suit his manufacturing requirements. The second point was recommendation of mandatory labeling of cotton hose, as being of "combed yarn" or "carded yarn" or "combed mercerized yarn" or "carded mercerized yarn." An exhibit showing cones of 36/2 combed, and 36/2 carded, both mercerized; hose made from each; and other articles, was submitted as evidence that only in breaking strengths or wearing qualities could a consumer tell the difference in some combed and carded yarn products.

Dean Hill and J. S. Verlenden, representing the Mercerizers Association of America, filed statements endorsing the brief of the Southern Combed Yarn Spinners Association.

The Throwsters Research Institute filed a comprehensive statement in objection to the definitions of "crepe" in the proposed rules, proving that the definitions as given for crepe actually were definitions for grenadine and that both crepe and grenadine should be clarified more accurately. It was urged that crepe standards now in effect be not included in the rules as that would make them mandatory.

A number of weeks will doubtless pass before a final draft is offered by the Federal Trade Commission.

News! S.R.O. at Research Meeting

Overflow at U. S. Institute conference Nov. 19, fills up an extra dining-room

INTEREST IN RESEARCH in the textile industry may be dead, as some observers claim, but if so it's a pretty lively corpse. At the meeting of the United States Institute for Textile Research held in New York, Nov. 14, a reasonably sizable dining room had been engaged. By the time luncheon was served another and adjacent room had also been filled.

The Institute was fortunate in having as its guest Franklin W. Hobbs, chairman of the Textile Foundation, who paid a tribute to the industry's evident interest in research as reflected by the attendance. Dr. E. H. Killheffer, president of the Institute, presided.

It had been planned to include the election of officers, since this was the scheduled annual meeting, but the resignation of Charles H. Clark as secretary, due to ill-health, made it necessary to postpone this action pending consideration of the Institute's future.

Charles H. Clark, secretary of the United States Institute for Textile Research since its organization in 1930, has resigned due to ill health

WOOL FIBER RESEARCH. An open conference on cooperative research projects which the Institute is considering, has under way, and has completed was conducted by William D. Appel, of the National Bureau of Standards and chairman of the research council. The proposal that the Institute sponsor a new research on "Effects of Processing on the Wool Fiber" met with approval, and preliminary plans for financing the investigation were made. A proposal that the investigation should center on the effect of various processes on the resiliency of individual wool fibers evoked considerable discussion.

Reporting for the majority of the committee which was appointed to supervise the study, Rinaldo A. Lukens, of Continental Mills, pointed out that any reduction in fiber damage will result in a higher quality of product at a lower cost. Heretofore the chief obstacle to making such an investigation has been the lack of a reliable test method. Recently a new technique has been developed for determining the effect of processing on the resiliency of individual wool fibers. Fundamental research on wool fibers has disclosed that all changes in the chemical or physical structure of wool are reflected in resiliency measurements. Although resiliency is one of the outstanding characteristics of wool; no information is available as to the effect of various processes on this property. The committee recommends, therefore, that a study should be made of the effect of various chemical and physical treatments on the resiliency of individual fibers and that tests of yarns and fabrics be made to check the results of the individual fiber tests. Such an investigation should make possible some tangible results in the first year; it could be carried out at the National Bureau of Standards at a nominal cost; it should interest a large percentage of those engaged in the woolen and worsted industry.

In a minority report, Hugh Christison of Arlington Mills, advocated a different approach to the investigation, stating that he believes a study of methods for determining the causes of damage in woolen and worsted fabrics would be of even greater benefit than research on resiliency alone.

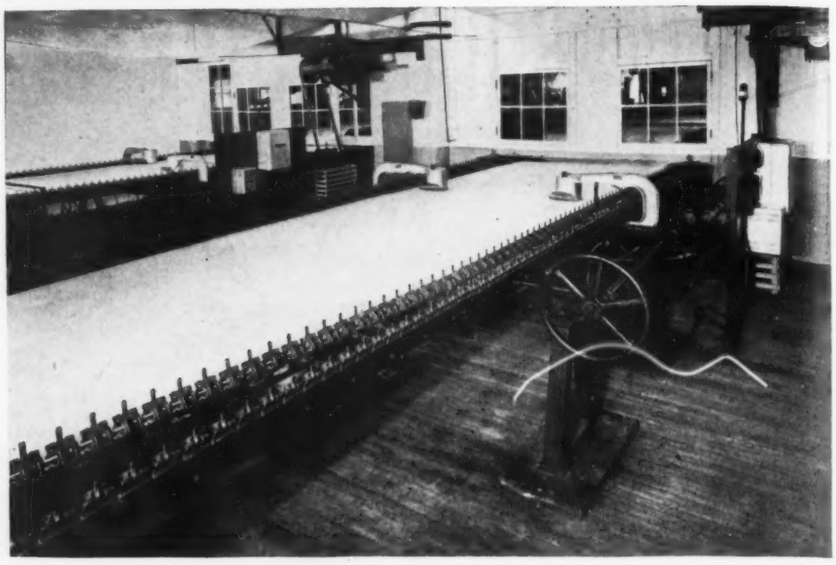
Dr. Milton Harris, director of research for the Textile Foundation, described a method for making stress-strain curves of individual fibers in order to determine the effect of chemical and physical processing on the resiliency of the fibers. Other speakers who supported the idea of studying resiliency of individual fibers were Werner Von Bergen, of Forstmann Woolen Co., and A. G. Ashcroft, of Alexander Smith & Sons Carpet Co.

OTHER INVESTIGATIONS. Carl R. Harris, chairman of the committee on warp sizing research, reported briefly on the progress of the work and sizing of cotton and spun rayon which has recently been started at North Carolina State College. Mr. Harris stated that a means had been developed for performing abrasion tests on yarn which approximates the results obtained in weaving and that the research workers are now devising small-scale sizing tests which will simulate large-scale operations.

Dr. A. C. Walker, chairman of the committee on drying research, stated that the last report to the cooperating sponsors had just gone out and that some of the earlier reports have now been published. He believes that the results which have been published can be used to answer some of the problems of the textile industry which involve the rate of drying and its effect on the properties of textiles. The latest report deals with the effect of temperature and presence of various finishing materials on properties of textiles. Commenting on this report Alban Eavenson, of Eavenson & Levering Co., stated that the benefits in his plant from the drying research already have amounted to more than the contribution which the company made to the investigation.

Reporting on the progress of a study of Textile Inventory Policies and Guides made under direction of the committee on economic research, Fessenden S. Blanchard, of Pacific Mills, said that the work is reaching completion and preparation of the report is now under way. The purpose of the report will be to analyze recent experiences in inventory management in various branches of the industry and to point out practical guides toward an improved inventory policy which will make it easier to avoid some of the mistakes of the past.

Last month we talked a lot, in our special "Textile Modernization for Defense" section, about the need for maximum efficiency in plant, equipment, policies, etc., if each company is to contribute its part during the emergency. We made our suggestions specific by including check charts of individual machines, accessories, services, etc. To be still more specific, we are calling attention this month to the following three articles describing actual installations of modern productive and auxiliary equipment. These three stories are merely examples of what can be done in nearly every part of the mill and every phase of management activity. We shall continue to run similar stories in future issues of TEXTILE WORLD, just as we have in the past.



General Electric weft straighteners on two Winsor & Jerauld tenters in wide-goods finishing room of Riverside & Dan River Cotton Mills

Automatic Weft Straighteners

At Riverside & Dan River Cotton Mills remove skew from cloth during tentering

SKEWED FILLING has long been a bane to finishers of cotton fabrics. With cloth speeds up to 30 yd. per min., an expert tenter-frame operator might be able to detect skew visually and correct it by manual control of the "straightening" motor on the frame. Even at those low speeds, however, results are subject to variation. At higher cloth speeds it is practically impossible to control the straightness of the filling manually. At Riverside & Dan River Cotton Mills, Danville, Va., three Winsor & Jerauld tenters have been equipped with General Electric Co. weft straighteners. One of these tenters is used for wide sheetings, one for narrow sheetings, and one for handkerchief fabrics and bird's-eye cloth. The superintendent of bleaching and finishing cites several advantages resulting from the installation. Chief among these are of the vastly improved quality of the goods and a considerable saving in material, the latter due to the fact that since the filling yarn in the finished piece is at right angles to the warp, the cloth tears true and waste is thereby reduced. Another advantage is elimination of eye fatigue.

The cloth is brought from the bleaching department over a scutcher and thence to the water mangle, dry cans, starch mangle, tenter, and on to the final dry cans. On the tenter the fabric comes under the control of the photoelectric straightener, which replaces an older manually operated device.

The straightener consists of two scanning units, a control unit, and a motor with suitable switches. Straightening is accomplished by accelerating one tenter chain with respect to the other, and thus bring the warp and filling yarns at right angles to each other.

As can be seen from the accompanying illustration, one scanning unit is located on each side of the frame near the drive end. In each scanning unit there is a phototube which is mounted over the cloth. Light sources are located directly beneath the phototubes so that their narrow beams, after passing through the slots of a Selsyn-operated disk, pass through the weave of the cloth to the phototubes. These parts are all assembled on a mounting bracket which is bolted to the rail of the tenter frame. As the cloth moves under the tubes, the filling yarns interrupt the light beams, thus producing definite light frequency inputs in the tubes. If the cloth is straight, the frequencies on the two phototubes will be equal. If, however, the filling is skewed, more light interruptions by filling threads will reach one tube than the other and the frequencies on the tubes will be unequal.

Each phototube is equipped with an amplifier, which is connected to a frequency-responsive circuit. Thus, any inequality of frequencies will operate a field supply rectifier unit, which gives generator field control to operate the straightening motor. In the photograph the control panel can be seen at the right of each frame. The control is sensitive over a wide range of operation, and the action is continuous and entirely automatic.

Cloth speeds may vary from 20 to 140 yd. per min. and the filling count may vary from 20 per in. in open-weave materials to 100 per in. in closely woven fabrics. Obviously goods that are too closely woven to prevent ready passage of the light beams are not so easily or accurately controlled as are the more open constructions, but for all practical purposes the mill executives express themselves as being thoroughly satisfied with results being obtained.

Headless-Package Twisting

New method used by Atlantic Rayon obviates redrawing, cuts warping cost

INSTALLATION OF EQUIPMENT headless-package twisting is the latest step taken by Atlantic Rayon Corp. in its constant efforts to simplify and improve the operations involved in throwing and dyeing rayon yarn. The new method is designed for use in throwing all extra-twisted, single-ply synthetic yarns (with the exception of full crepe twist) and numerous plied and combination yarns. Packages produced on the new twisters are of two sizes (6 in. and 3½ in. long), the larger containing in some cases as much as 24 oz. of yarn. They will deliver by rotation or over-end at high speed for warping or for quilling on the new automatic filling-quill winders. A total of 64,000 spindles of all types is now in operation in the company's two plants at Providence, R. I., and Lowell, Mass.

The technological progress made over a period of years by Atlantic Rayon Corp. is due in large part to the fact that the company is an ardent believer in the value of research and development work. The company has pioneered in the improvement of processes and equipment for dyeing and throwing rayon. Thus, in 1936, was begun development and installation of equipment for package dyeing of viscose rayon yarn. Two years later the company acquired exclusive rights to a new fast-color dyeing process for acetate yarn, and, after extensive research, succeeded in adopting this process to package dyeing.

At the same time that efforts were being made to simplify and improve the dyeing operations, similar attention was being given to the possibility of eliminating unnecessary throwing operations and increasing the size of yarn packages. This led to several improvements in throwing machinery, and then —following three years research—to the development of equipment of radically new design for headless-package twisting. Cooperating with Atlantic Rayon Corp. in the development of this equipment was U. S. Textile Machine Co., Scranton, Pa.

A close-up of the new twister is shown in Fig. 1. In Fig. 2 the 24-oz. headless-package produced on it is contrasted with the old type 8-oz. shipping spool formerly employed. Most important of the many improvements on the machine itself is the elimination of flyers and the substitution in place of them of special compensating guides designed to provide constant tension on the yarn, and to permit spindle speeds as high as 15,000 r.p.m. Another essential feature is an expanding adaptor for holding the paper tubes on which the yarn is twisted. Incidentally, patents have been applied for on the machine, and plans have been made to license its use to other throwsters. Among the types of yarn which can be handled successfully are lace twist, Schiffli twist, selvage yarn, spun-rayon and filament-acetate twists, etc.

Advantages of headless-package twisting from the viewpoint of the throwster include elimination of redrawing operation, higher twisting speeds, and the reduction in number of doffs. These advantages are offset to some extent by the higher initial cost of the equipment, which is in the neighborhood of $20 per spindle, as compared with about $5 per spindle for conventional types of machines.

Among the benefits from the standpoint of the user of the yarn are greatly reduced warping costs due to large size of package, magazine tails, high speed at which package will deliver the yarn, applicability of package to new automatic winders, fewer knots, and less possibility of damaged or dirty yarn because of elimination of redrawing operation and of use of flyers in twisting.

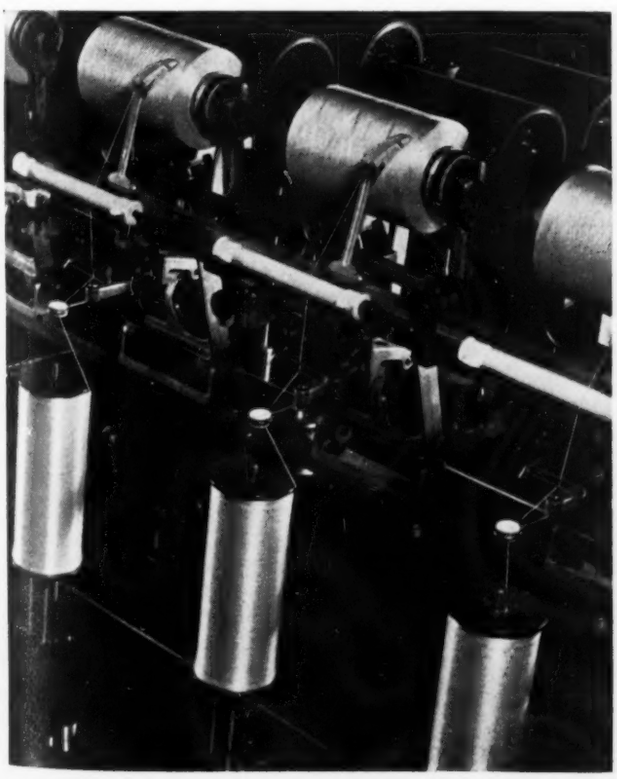


Fig. 1. Close up of headless - package twisting equipment installed by Atlantic Rayon Corp. showing special compensating guide

Fig. 2. New headless-package containing 24 oz. of yarn contrasted with old-style 8-oz. shipping spool

EXAMPLES OF EFFECTIVE USE OF MODERN EQUIPMENT

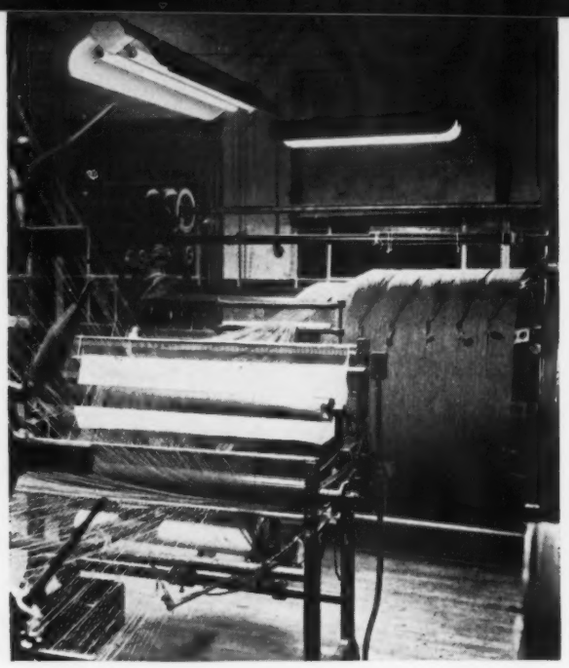


Fig. 1. Fluorescent lighting in warping department at Uxbridge; two 36-in. single-tube units mounted 10 ft. above floor at creel of each warper provides 20 to 35 foot-candles; one Miller 48-in. double-tube flood-type unit mounted 8 ft. above floor and 4 ft. above dressing frame provides 40 foot-candles; similar double-tube unit mounted 8 ft. above floor at beam provides 25 to 35 foot-candles

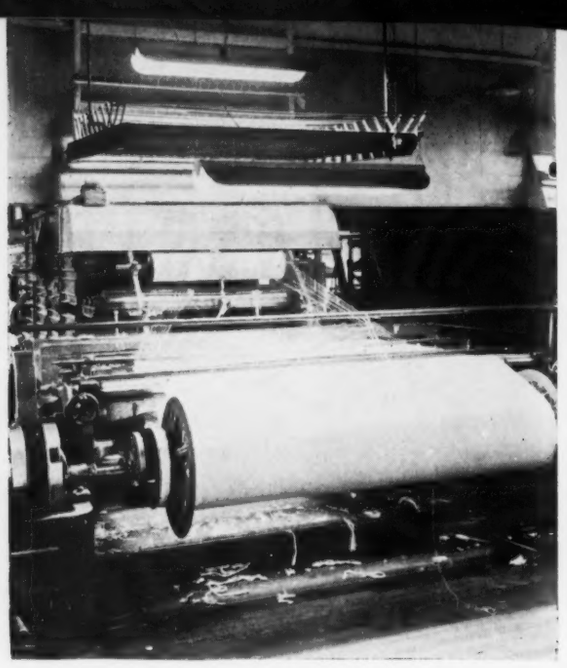


Fig. 2. View in slashing department; five 48-in. double-tube flood-type fluorescent units are used for each slasher; one mounted 8 ft. above floor provides 35 foot-candles on spool rack; one mounted 3 ft. above warp beam provides 80-foot-candles at the beam; three at entering end of sizer spaced on 8-ft. centers and mounted 10 ft. above floor and 6½ ft. above section beams provide 25 foot-candles on beams

Fluorescent Lighting Installation

Results of nine months' mill operation; further benefits promised by new units

By J. M. SHUTE
Uxbridge Worsted Co.

TWO YEARS AGO news of a new light source — the fluorescent lamp — was flashed to the world. It was called the first opportunity to give to industry the high levels of illumination which science said it must have for the easy seeing essential to increased volume and improved quality of production. Advantages cited for the fluorescent lamp were higher lighting efficiency at the same wattage, nearest approach to natural daylight ever known, larger area of uniform illumination, better diffusion, low brightness, low operating temperature, better color matching and correction, long life, and economy of operation and maintenance.

Uxbridge Worsted Co. has used fluorescent lighting, in one or another of its ten plants located in four states, for nine months. Views of installations in several departments of the Uxbridge (Mass.) plant are shown in Figs. 1 to 4. In that period we have received substantial benefits from fluorescent lighting. These benefits are: (1) an increase in weaving efficiency on automobile fabrics from 81% to 84%; (2) a decrease of 22% in defects and mending costs; (3) an increase in weaving efficiency on another type of auto fabric from 83% to 87.7%; (4) a decrease of 25% in mending costs; (same looms and yarns being used in every instance); (5) a jump in lighting efficiency from 18 to 40 foot-candles; and (6) an increase in mill operatives earnings through easier, quicker, and better production.

A word as to cost of fluorescent lighting. We have gone into this very thoroughly, and the economies have been found to be far beyond what we originally figured. Life of lamps exceeds what was promised—2,500 hr. We have found it to be 2,900 hr. We figure that a fair amortization rate for a fluorescent installation is a little over 3% a month, which will not only write off original cost, but will cover interest charges as well.

These benefits exceeded the expectations we had when we began the installation of fluorescent lighting equipment. Since we made our first installation of fluorescent lighting, we have noted the steady improvement in manufacturing technique by lighting-equipment engineers—two-lamp ballast equipment, power-factor correction, flicker reduction, etc. And now we have just installed in our Uxbridge (Mass.) plant the very latest development in fluorescent lighting equipment—continuous trough lighting, using Miller Co. Fluorescent Troffers.

CONTINUOUS TROUGH LIGHTING. When the manufacturers presented Troffer equipment, they made this promise for it: "It will give you higher levels of illumination of white or daylight quality, will distribute that illumination over entire room areas with a uniformity and diffusion never before obtainable in a practical manner, will permit looms and other machines to be changed around at any time, in any way, without the necessity of changing the lighting, and installation and maintenance costs are lower."

After careful investigation, we made an installation of 300 Troffers in our Uxbridge plant. The room area covered by the installation is 50x152 ft. In this area are three types of textile operation—mule spinning, filling winding, and frame spinning. The 300 units were installed in 25 rows, spaced 6 ft. apart. Each row consists of twelve 4-ft. Troffers running as a continuous row. White 48-in. Mazda fluorescent tubes are used in the entire area. The ceil-

Fig. 3. Folders are lighted by two 48-in. double-tube flood-type units; one at front and one at back of machine are mounted 8 ft. above floor, 2 ft. out from machine, and tilted at a 45° angle; a 48-in. single-tube concentrating-type unit is mounted inside machine 7 ft. above floor; illumination at eye level is 50 to 60 foot-candles on face of cloth and 30 foot-candles 30 in. above floor

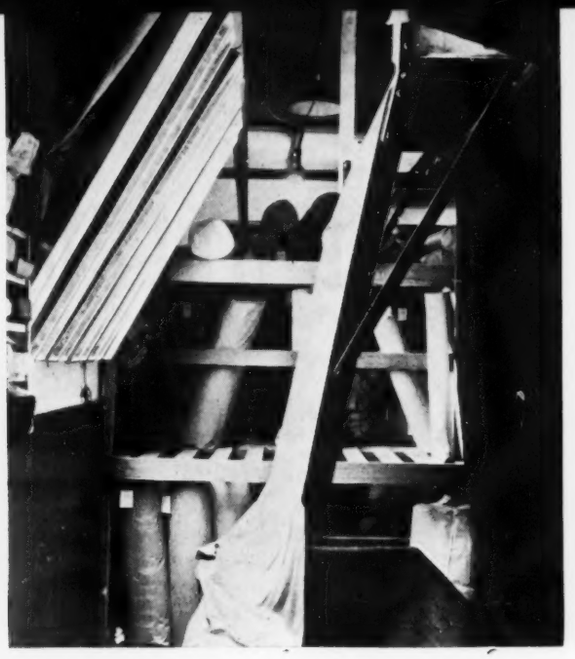


Fig. 4. Perch lighted by a battery of six 48-in. double-tube Miller Alzak aluminum fluorescent units; units at each end are concentrating type and four center units are flood type; units are mounted at an angle 3 ft. from top of board and 5 ft. at bottom; battery provides 50 foot-candles on cloth, daylight lamps are used; with this installation it is possible to inspect cloth at night

ing height in this room is 13 ft., and units are suspended 4 ft. from ceiling by chain supports. Views in this room are shown in Fig. 5. No other lighting is used in this area.

This installation provides:

1. On the mules—35 foot-candles of illumination at the spindles, and 45 foot-candles at the back roll.

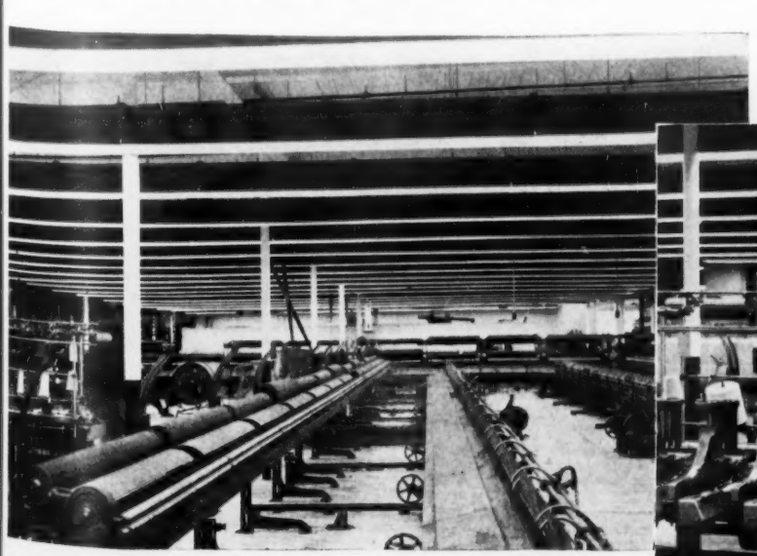
2. At the filling winding machines —35 to 40 foot-candles from skein to rack.

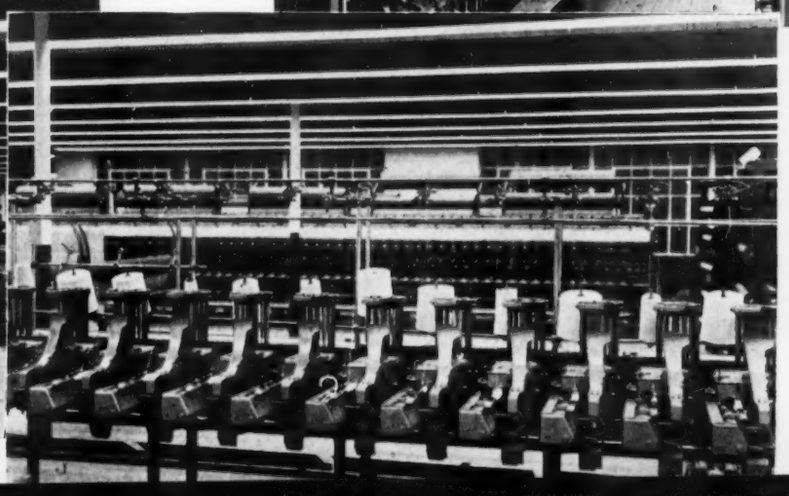
3. On the spinning frames—30 foot-candles vertical at the lower rail, 57 foot-candles at the upper rolls, and 40 foot-candles at the lower rolls.

We confidently expect that this latest installation will also result in surpassing our expectations—which are high. Already, this installation has proved two things: First, it provides higher levels of illumination, with more uniform distribution and far better diffusion. Second, the cost of installation was lower because the fixtures come completely wired, with wireway channel housing operating auxiliaries, sockets, and feeder conductors, and need only to be connected to main feeders, which was done from below. We have never seen operators of machines respond so willingly under any other light and work so fast and so correctly.

From the results obtained thus far, the continuous-trough installation gives promise of even greater benefits than those we have already received from nine months' operation under fluorescent lighting. In fact, we are so pleased with the installation in our Uxbridge plant that we are shipping a couple of truck-loads of Troffers to our mill in Macon, Ga., where they will be recessed in the accoustical ceiling in the weave room of that plant. That building is windowless and is completely air-conditioned. We expect the cost of operating the air conditioning equipment will be materially cut down because of the very low temperature of the fluorescent lamp.

Fig. 5. Mules, ring-spinning frames, and filling winders are located in a room 50 x 152 ft. with average ceiling height of 13 ft. lighted by 25 continuous rows of Miller Troffers; each row is made up of 12 4-ft. sections, each section using a 40-watt, 48-in. white Mazda fluorescent lamp; rows of units are suspended at average distance of 4 ft. from ceiling by chain running from center of each 4-ft. section; illumination at mule is 35-foot candles at spindles, 45 foot-candles at back roll; illumination at ring spinning frame is 57 foot-candles at back rolls, 30 foot-candles vertical at rail, 40 foot-candles at front rolls; at filling winder illumination at yarn packages is 35 to 40 foot-candles





To Buy or Not to Buy

Is the question that's driving purchasing agents nuts these days

"HOW FAR AHEAD should the mill buy supplies?" is a question frequently asked purchasing agents these days in the light of the European situation. General supply and commodity prices have advanced an average of 10 to 15% during the last year and probably will continue to advance as the war progresses. However, there is a question as to just how far ahead the average mill should go in tying up its funds in unused material, extra warehouse space, products which may deteriorate, etc.

Many mills remember the shortage of various supplies during the last war and are seeking desperately to avoid being caught short again. A careful, calm analysis of domestic supplies and alternate sources will show that in most cases there is no need for hysterical over-buying, although the purchasing agent should be equally careful to see that his mill is not caught short of those supplies which are hard to get and will become scarcer.

Let's take a look at certain basic supplies and commodities during the last year and compare their activities with what happened during the last war:

Coal in 1916 jumped from $1.85 per ton at the mine to $5.64 in 1920. There is some feeling that this might possibly be repeated during the present war if it lasts long enough. However, since September, 1939, prices have remained constant at $1.25, except for a Government-inspired increase to $1.50 in October of this year. It is likely that coal will get no cheaper for the duration of the war, but there is no apparent reason for any immediate disproportionate price advance. There is a tremendous surplus on hand and the mines have huge capacity to produce. Further, modern methods of combustion are more economical than during the last war. Large users of coal, such as gas manufacturers, are buying all they can accommodate at present prices, but there is considerable doubt that the relatively small user should find it necessary to buy more than a few months ahead.

Cornstarch increased from $3.51 per cwt. to a high of $4.01 per cwt. during the last year. Price of cornstarch usually parallels the price of raw corn. If this gets too high, there are other sizing materials on the market which can be used. During the last war corn jumped from 69¢ to $1.74 per bushel.

Card clothing, the price of which has been stable for years, has advanced 10% since February, 1940. This, generally speaking, is a domestic product, and the chances are that it will not advance in cost any faster than labor and steel costs rise.

Copper wire of certain types is getting difficult to locate.

Leather belting is up 2½ to 10% since September, 1939. Practically all the belting used today is produced domestically, although certain specialties like check straps are normally imported from France or England. American hides, supplemented with South American hides, should supply plenty of leather for textile uses. However, if a shortage should develop, there are synthetic materials and rubber or fabric belts far superior to those available during the last war. Sole leather rose from 40c. lb. in 1914 to 84c. lb. in 1918.

Pine lumber during recent months in the South has increased from 20 to 25% in price, which is considerably out of proportion to increases in other commodity prices. Reasons given by lumber manufacturers for the abnormal advance is that Government construction is taking all available supplies. Lumber skyrocketed during the last war from $13.41 per 1,000 ft. in 1914 to $46.86 in 1920. This commodity seems to be extremely sensitive to the war boom and is an item which should be watched by purchasing agents.

Reeds and harnesses have shown no increase in price during the last year, although they are made primarily of domestic steel, which is a war commodity. Three years ago prices were raised 7½%.

Rubber pickers are up about 10% over last year, and it is conceivable that the price may advance further because of the raw rubber situation. However, picker manufacturers no doubt will do everything possible to keep prices low, since this is one of the selling features of rubber pickers.

Steel (cold rolled) is a war commodity which excited purchasing agents in September 1939. Some mills laid in as much as five years' supply, and others are continuing to buy in sizeable quantities. Conservative purchasing agents say that this distant buying was not necessary and point out that the price of steel has remained stable, since the war began, at 5c. per lb. in any quantity. Some buyers do not believe that the price of steel is likely to become prohibitive, but there is a feeling that deliveries will be slow because of the defense program. Master mechanics report that it is difficult to get tool steel at the present time, and are looking about for substitutes to use if it gets scarcer. It is estimated by some that six months' supply of ordinary steel is adequate at present, although this point is challenged by others. During the last war the composite price of steel rose from $.0143 per lb. in 1914 to $.0419 per lb. in 1917.

Imported woolen cloth for slashers, rollers, etc., at the present time is up only about 8% in price. Although the source may be eliminated, there is a limit to the number of these blankets which a mill should stock because they often deteriorate. Good domestic slasher blankets are available.

Emery fillet—the best, is said to come from England, and today is up about 15% in price over last year. Undoubtedly the imported will become more expensive, but there is good U. S. emery fillet on the market. Most purchasing agents advise stocking well ahead on the imported supply.

Burlap situation, which we reported in last month's issue, illustrates clearly the points to watch in buying supplies. When the European conflict got underway last year, the price of burlap jumped from 4.35c. per yd. in August, 1939, to 9.61c. per yd. in October of that same year. Mills which doubted the justification for such a large increase shifted to osnaburgs or heavy kraft paper. American companies immediately started research to find a substitute for burlap, which is still going forward. Ultimate outcome was that burlap dropped back to 4.8c. but has reached 6.45c. again.

A classic example of the last war is the present American dye industry which grew out of a painfully remembered shortage of dyes during the 1914-1918 conflict. One of the few bright spots in the present picture is that other American industries will possibly grow out of this war, although there is not likely to be any great development in the textile supply field, since most of these sources already are well established.

North Carolina Yarn Association

Plays at Pinehurst in their annual outing

ELECTION CARES, and war scares were ignored by the golfers, skeet shooters, and bridge addicts gathered at Carolina Hotel, Pinehurst, Oct. 25, for the annual outing of the North Carolina Yarn Group.

Out of the total of 400 in attendance, more than half registered for the golf tournament, managed again this year by Sam Diggle, the old maestro who was delegated by Fred Lemmond, chairman of the golf committee to carry on regardless of third-term traditions. Out of the 200 or more entrants, 78 were awarded prizes at the banquet Saturday night. Ray Weaver, president of the association, and toastmaster at the banquet, called on John Sherrell to announce the winners of the various events. Prizes were awarded to skillful skeet shooters and one *surprize* was tendered George Porges for "low gross in African golf." The complete score in this contest was not obtainable at present writing. Skeet shooters were ably paced by Joe Mason, committeeman in charge, who was well-pleased with the popularity of the contest, and who, incidentally, walked away with first prize. Other committee chairmen, N. P. Murphy, on prizes; Walter Brown, on invitations; and Jim McDowell, on entertainment, cooperated fully in making the meeting a success.

The officers of the association are: Ray Weaver, president; John Sherrill, vice-president; Gordon Hope, secretary; and Joe Mason, treasurer.

On the Golf Links—names read left to right:

1. Frank Causey, E. W. Best, Jr., Jas. Lybrand, Jas. Bailey
2. Frank Love, Joe Morton, R. B. Steere
3. Howard Gordon, John Fox, Jr., Cliff Elder
4. Jno. C. Wilmerding, H. W. Rose, Norman Cocke, L. N. Hale
5. H. C. Carter, J. W. Gardner, A. B. Quinn
6. G. D. Garrett, W. E. Mitchell, A. J. Baker

Other diversions:

7. Wm. H. Newton, Karl Ginter
8. Joe Mason says "Pull!"
9. Ray Weaver draws a bead
10. Henry Neubert, Frank Scull with Sunday papers

Correct Roll Covering Practice

Involves choice of proper leather and care in cutting and mounting of cots

Properties of the various types of roller covering materials, the kind of work for which each is best suited, and the elements of good practice in applying cots are discussed in "The A-B-C & X-Y-Z of Cotton Spinning Roller Covering," a booklet published recently by the Gill Leather Co., Salem, Mass. The following abstract of one section of the booklet is presented through the courtesy of that company.

★ ★ ★

TO DO THE BEST JOB of roller covering, equipment and tools must be in perfect shape. There is absolutely no need to have an untidy dilapidated shop. Have ample storage space for leather and cloth. Make sure that no vital machine parts are worn and that all moving parts are properly oiled and smooth running.

The first step in roller covering is the one of cleaning the rollers. To do the job is not difficult; but it means knowing how. The soaking solution of boiling water should quickly take off the leather and the cloth. The iron rollers are now dumped into a boiling solution of trisodium phosphate, 4 to 5 lb. per 4 gal., and allowed to stand in it for 15 min. to get every last trace of grease and oil off the steel arbors. Even a trace will prevent perfect adhesion of the roller cloth. The rollers are now rinsed and permitted to dry. It is advisable to put the cloth on without letting the rollers cool; if the glue is put on the cool steel, it can "jell" or set before proper adhesion takes place.

If, with these precautions, the cloth still does not cling so that it is pulled off with difficulty, it may be that too acid a glue is being employed. If acetic acid is being added to the glue, it is advisable to cut it down by degrees to a point where a more neutral balance is reached.

Cloth for roller covering should be stripped lengthwise, as there is less stretch the warpway than the fillingway. It should be blocked so that the warp yarn follows around the roll. It is essential to have templates made to the exact size of the various rolls; then when the cloth is blocked, it will fit perfectly, making the butt joint practically invisible. Never block over ten or twelve strips at a time. After stripping, the cloth should be cut within $\frac{1}{64}$ in. of the size necessary to go around the roller. The rolling it receives in the calender roller will squeeze the ends together.

The choice of leather depends on the type of machines, the numbers to be spun, and the preferences and methods of the boss spinner. If a spinner chooses to operate his frames like a laundry wringer, with the crushing weights of a rolling mill, it is foolish to cover his rollers with a soft, light sheepskin; he needs the toughest and mose durable calfskin to be had. A good rule to follow is to use a light-weight sheepskin for very fine spinning, a light-medium to plump sheepskin for medium-fine spinning, and heavy sheepskin or calf for the coarser counts.

In stripping sheepskin or calfskin, always strip from neck to butt. That is the direction of the natural stretch of the skins and of the roll of the grain papillae of sheepskin. When cutting sheepskin, consider that nature made the flanks thinner than the centers. To level the thickness means cutting away the flesh of the backs and decreasing the strength. The strength of leather is 90% in the flesh fibers and only 10% in the grain structure.

TO GUARANTEE that like rollers will all have the same weight leather on them, strips should be sorted into three piles —flanks, sides, and centers. Leather from the flanks is fine for covering back rolls and rolls which are called upon to face very little strain and pressure. The sides are most suitable for all general work, and the centers for those spinning jobs that need full strength and durability. This system of making three piles will also prove to be of great advantage in cutting the cots. The flanks are comparatively stretchy, while the centers are largely free from stretch. Hence, cots cut from the flanks must be shorter to allow for the greater amount of stretch in the leather.

In the United States, it is the practice to run the strips over a file placed perpendicularly in the work bench in order to rough-up the flesh side of the leather to obtain better adherence to the roller cloth and to remove as much of the excess stretch as possible. Often this is overdone; and the advice is to go easy and not overdo it.

In making the bevel, the important thing is to have the scarfing knife razor-sharp. Almost everyone finds it easier to cut bevels with the grain side of the leather to the scarfing block, and that method is recommended.

It is advisable to cut chrome-calf bevels a tiny bit larger than is customary with bark-sheep or calf. It would be foolish to try to give definite sizes for these bevels, because a lot depends on the cement used; even weather conditions affect cementing. The best advice is to follow the old rule of cutting bevels as narrow as practical and of using as little cement as possible. The idea is to make as smooth a lap as possible without the laps opening up at any time while the rollers are in service. If the bevels open up, the manner of beveling and cementing must be reviewed and adjustments made.

To cement sheep cots, the cement, at approximately 130° F. and with a consistency of light cream, should be spread smoothly and evenly over the bevel next to the cement bar. The cement can be put on with a stick which is about the thickness of a wooden match and around which is wound some cotton waste. The excess should be wiped off with the third finger, which is kept clean by wiping it on a piece of waste roller cloth tacked to the bench. The other bevel is curled around the bar, using care to have only a pencil line showing. The clamp bar is brought down, and the job is done in a couple of seconds. If the lap does not stick, either the cement is wrong or the leather is too dry. Dry leather sucks-in or blots up cement so that none is left on the outside to stick.

Cementing of bark-tanned spinner calf is approximately the same as that of sheep. Chrome-tanned spinner calf presents a more difficult problem—black-chrome calf especially. The advice here is always to prime a chrome lap. Chrome spinner calf can be cemented without priming, but there is always the fear that the lap will open up in the spinning frames. It is possible to get an unprimed lap past the drawing-on stage by cutting the cots slightly larger, but such cots may even-

tually stretch and be loose on the rolls. As there is a lot of stretch in chrome leather, it is absolutely necessary that the cots be extra tight when drawing-on. Because two layers of cement are used with primed chrome laps, a few extra drops of glycerine and acetic acid should be added to the cement to keep it soft and pliable.

To prime chrome laps, thin the cement to the consistence of whole milk. Put it on clean and smooth, with absolutely none overlapping the edges. Allow the priming coat to set several hours and then cement in the usual way with full-strength cement, being sure to put cement on the unprimed lap. If the laps do not hold perfectly after the rollers get into service, the strength of the prime coat must be increased.

In the winter time, it is sometimes necessary to warm chrome cots before cementing. Cold chrome leather congeals cement, causing it to lose a large part of its penetrating power and adhesive properties.

DRAWING-ON is a relatively simple operation and needs no special comment, except to say that the slip-fingers should be as thin as possible and must not be bent or twisted. In drawing-on comber or drawing rollers, damage can be prevented by having detachable fingers, permitting half the fingers to be drawn out at one time. If it is found that many cots are bursting in the drawing-on process, either the leather is too dry or the cots are too small. Some leathers have less stretch than others, and this must be allowed for in cutting cots.

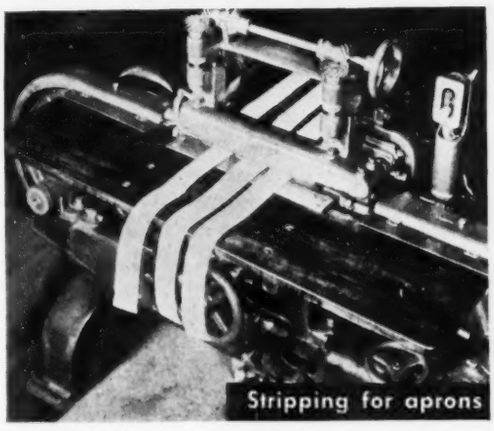
Burning down is best done with a straight-grained hardwood stick which has been boiled in oil, tallow, or a mixture of hot paffin wax and beeswax. Such sticks are really necessary with chrome calf. The appearance of many chrome-calf rolls is spoiled by too much heat being generated over the burn, giving the shoulders of the roll a yellow discoloration. If the operative doing the burning relaxes pressure two or three times in the process, the shoulder cools down enough so it is not scorched.

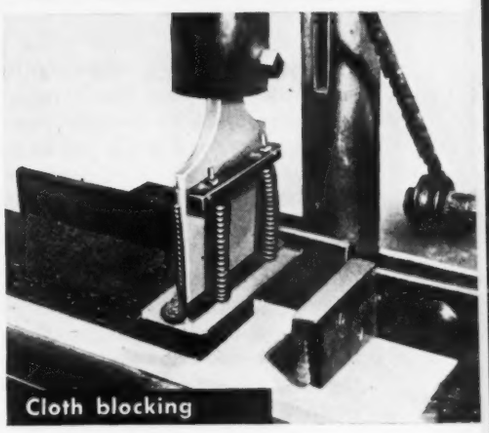
It helps the wearing and working of a top roll to give it a top-roll dressing directly after burning down. If given a dressing, the rolls should be permitted to set a few minutes before calendering in a hot calender roller. The rollers should not be over 140° F. for vegetable tanned leather, but can go up to 170° F. or higher for chrome.

Summing up this business of roller covering: Follow the rule of buying only the best materials; keep the shop neat, clean, and in good working order; bar the door to laziness in all its forms and manifestations.

Stripping cloth

Stripping leather


Stripping for aprons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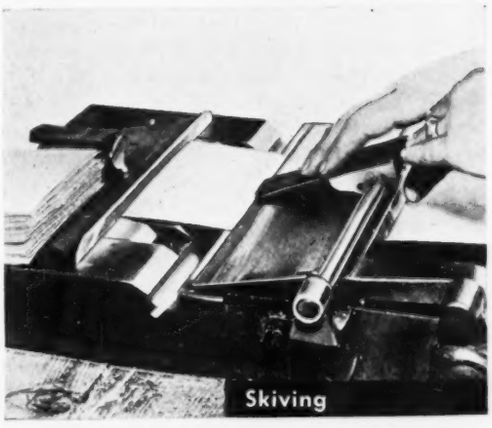
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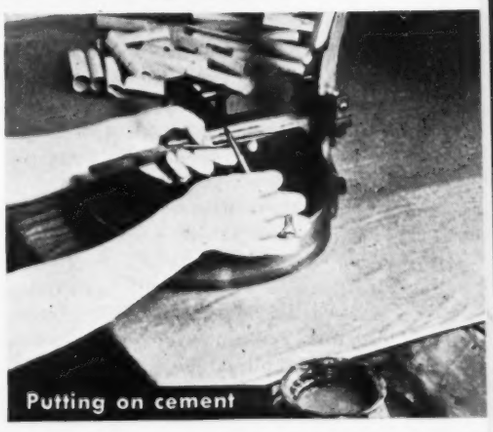
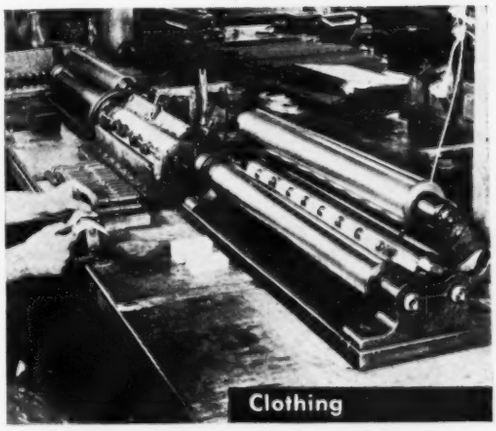
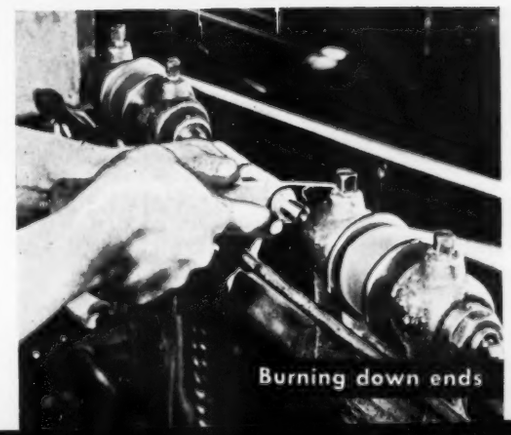
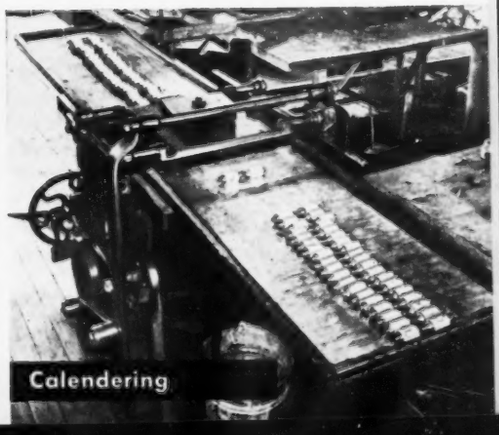

Putting on cement


Clothing

Shoving on cots


Burning down ends


Calendering

Aridye Process

Makes notable advances; recent patents cover products and methods of printing

FOLLOWING THEIR INTRODUCTION somewhat less than three years ago, Aridye colors have steadily gained in importance in the textile printing field. Progress has been along two main avenues: development of a wider range of colors, and application of these pigment colors to a more diversified line of fabrics. An article in the May, 1938, issue of TEXTILE WORLD described the method employed in applying Aridye colors to cotton shirtings and discussed the fastness and other properties of prints produced in that way. With the granting last month to Interchemical Corp. of patents covering the manufacture and application of Aridye colors, further information on the colors themselves was made available. Hence, this appears to be an opportune time to bring up-to-date the story of this major development in printing.

Known in the trade as resin-pigment colors, the Aridye colors are described in more detail in U. S. Patent No. 2,222,581 as "A textile printing paste consisting of an emulsion having an outer continuous water-immiscible-lacquer phase consisting of thin pigmented lacquer containing a binder amounting to at least twice the amount of pigment by volume and including a readily heat-polymerizable synthetic resin which can be converted into an insoluble state by heating after printing, and thickened to printing consistency by an inner aqueous phase amounting to at least 20% of the total emulsion, by weight."

Among the outstanding characteristics cited for the Aridye colors when they were first introduced were their clarity of impression, fine definition of detail, and excellent fastness to light and washing. Because of these properties, they appeared to be particularly suitable for application to cotton shirtings and it was in this field that they first won recognition. Printers soon saw the advantages of using Aridye green, yellow, and blue in combination with Rapidogens and naphthols on cotton dress goods. By this means new brilliant shades were obtained, together with elimination of the difficulty sometimes encountered in developing the leuco-vat dyes previously employed. The next step was the adoption of Aridye gray, and then pink and other colors for pastel blotch patterns. About the same time there arose a vogue for photographic effects on fabrics for beach coats, pajamas, housecoats, and similar garments; and several million yards of such fabrics were produced.

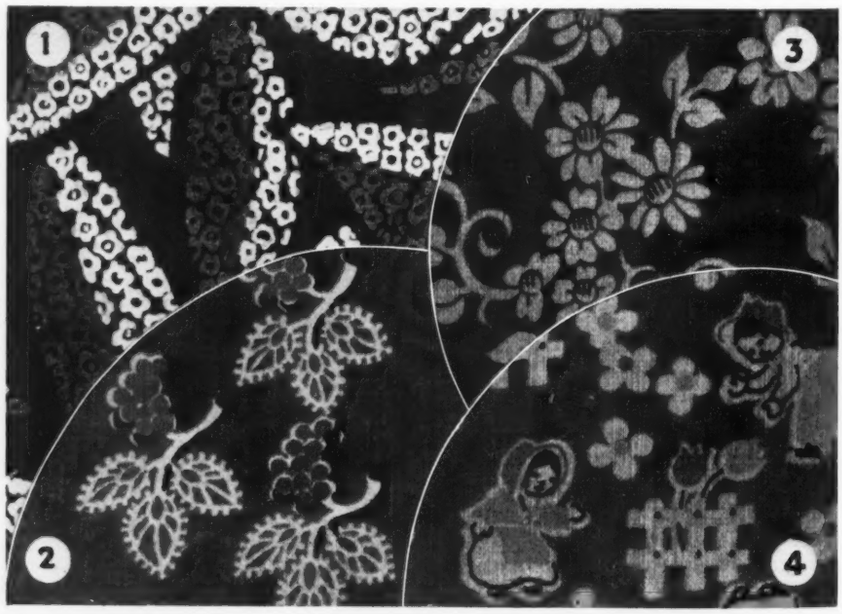
Sold in the form of a concentrated emulsion, the Aridye colors are diluted to proper strength for a desired shade by means of an unpigmented emulsion known as a "clear." Introduction of an improved clear which gave a softer hand than was imparted by the original one opened up a new field—that of rayon fabrics. The hand was further improved by making available more concentrated colors, which permit use of less color and more clear to obtain a given shade.

Thus far Aridye colors have been employed chiefly on viscose rayon fabrics, such as pigmented and French crepes and spun rayons. In addition, a limited range of shades is being produced on cuprammonium rayon. Work is now being carried out on the application of pigment prints to acetate fabrics.

Most recent development has been the adaptation of the Aridye process to discharge printing. The hydrosulphite or other discharge agent is incorporated with the colors by a special procedure to effect bright yellow, green, and blue discharges. A method for producing white discharges is now emerging from the experimental stage.

Designers have found that the Aridye colors have in some instances permitted them to obtain effects which previously were not feasible. This is due primarily to the brilliance of the colors, the sharp definition obtained, and the ability to reproduce fine shading. On drapery fabrics for example, the resin-pigment colors are being employed to produce floral effects in light shades and as outline blacks and browns to give sharper delineation.

One of the more interesting of the applications of these colors is in printing flannelette. Here the chief advantage lies in the fact that since the cloth does not have to be washed after printing, renapping is not necessary. Other applications not mentioned above include printing of fabrics for slacks, shorts, housecoats, children's playsuits, bedspreads, and automobile tops. Experiments now being conducted indicate that use of Aridye colors in screen printing may be feasible. Further away, perhaps, but still a possibility which is not being overlooked is the production of solid-color effects on cotton piece goods. Extension of the range of colors and further improvement than has already been made in fastness to crocking of dark shades can also be expected; and these, in turn, undoubtedly will lead to still broader applications for this type of colors.



Various types of Aridye prints: 1, Aridye discharge print; 2, blotch print with Aridye gray ground and Aridye and Rapidogen colors in floral design; 3, Aridye single-color blotch print; 4, Aridye four-color blotch print

Cotton Machinery Lubrication

Requires understanding of fundamental principles for satisfactory results

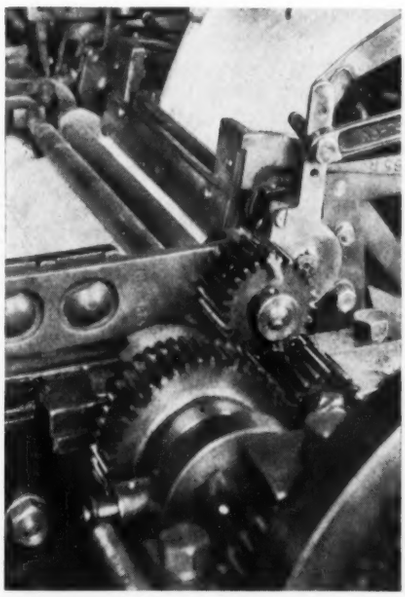
By WILLIAM G. FORBES

MANY RADICAL CHANGES have taken place in textile mill lubrication practice in the last 30 years. There was a time when the mineral oil salesman had a tough job on his hands and was happy if he could sell a little mineral oil to add to the sperm and lard oils which were then in common use. Mineral oils gradually replaced organic oils. And now on many textile machines, mineral oils are being replaced by grease. Ball and roller bearings with their high anti-friction properties are becoming increasingly popular and since they require little lubrication, grease is used when speeds are moderate. These improvements make for cleaner machines and less chance of troublesome stains.

Perhaps the best method of examining mill lubrication problems is to commence with the lineshafting and general machine requirements where hand oiling is employed, or where devices such as drop-feed oil cups, wick oilers, etc., are installed. For these methods of lubrication, the best practice is to employ a medium-bodied, good grade of engine oil, having a Saybolt viscosity reading of 250 to 300 sec. at 100° F. In this connection, it is worthy of note that during summer months the public changes to heavier bodied oils in its automobile engines. This practice can be followed to advantage in textile mills by stepping up the body of general-purpose bearing oils to a viscosity of 350 to 400 sec. at 100° F. during the hot months. By this simple expedient, bearings benefit by retaining oil longer; there is less waste, machines are cleaner, and there is less oil on the floor.

The use of compounds in mill bearing oils has received consideration in recent years, the idea being to increase the adhesive qualities of the oils without increasing their body or resistance to flow. For example, addition of 1% oleic acid imparts this property to oil.

The above comments are applicable to lineshafting and to all machine bearings in the opening room, such as those on bale breakers, openers, cleaners, etc. They also apply to many picker-room and card-room bearings.



To prevent excessive churning, oil level in comb box should be low

IN THE CARD ROOM the principal mechanism which sometimes requires special attention is the comb box. Each box contains an oil bath in which the vibrating parts are splash-lubricated. Use of grease in these boxes can not be recommended, because grease is a mixture of soap and oil, and, under the conditions of operation, the soap tends to separate from the oil. However, it is not unusual to hear claims that comb boxes run cooler with grease than with oil. This fallacy is generally brought about by soap deposits which insulate the box and make it feel cool on the outside. Investigation usually will show the temperature on the inside to be much higher than it should be. Comb boxes are designed for oil lubrication, and best results are secured by using a fairly heavy-bodied machine oil. The Saybolt viscosity reading should be about 500 sec. at 100° F., and the oil level should be kept low.

FOR THE BEARINGS of drawing frames, sliver- and ribbon-lap machines, combers, etc., the same general-purpose oil is commonly used as on the previous machines. However, to minimize the creeping of oil from bearings, it may be advantageous to use a fluid grease on these machines. Fluid greases are mineral oils to which a small percentage of soap has been added as a thickener. However, if the bearings are wiped clean around the shafts after oiling, there should be no staining of materials when a medium-bodied engine oil is used.

Fundamentally, there are two types of grease in common use: lime-soap and soda-soap. Both types are a combination of soap and mineral oil. For plain bronze bearings, lime-soap greases are suitable providing bearing temperatures are normal; for anti-friction bearings of the ball- and roller-bearing type, soda-soap greases usually give better results. This is due to the fact that the grease in an anti-friction bearing is subjected to a whirling motion in which centrifugal force tends to separate the oil from the soap. Since soda-base greases do not separate as readily as lime-soap types, they are better adapted to ball- and roller-bearing installations.

Generally, lime-soap greases are not suitable for temperatures above 180° F. On the other hand, soda-soap greases are suitable for temperatures up to 300° F. Hence, any plain or anti-friction bearings that are located in warm or hot surroundings should be supplied with a soda-soap grease.

Brands of grease for anti-friction bearings vary in detail of composition and in the methods employed to produce them. However, these matters will not be elaborated on here because, after all, users are more interested in fundamental facts which can be put to practical use than in technicalities of refining methods. On the other hand, it might be well to add a note of caution: Never pack an anti-friction bearing too tightly. This practice is very common and results in excessive churning and consequent overheating of the grease. Over-lubrication is highly detrimental and many even jam the race and destroy the mirror-smooth surfaces of the bearing parts. Anti-friction bearings require very modest amounts of lubricant to coat the parts, no more and no less.

[*In a subsequent article, Mr. Forbes will discuss lubrication of roving and spinning frames.*—EDITOR]

Waxing Silk Threads

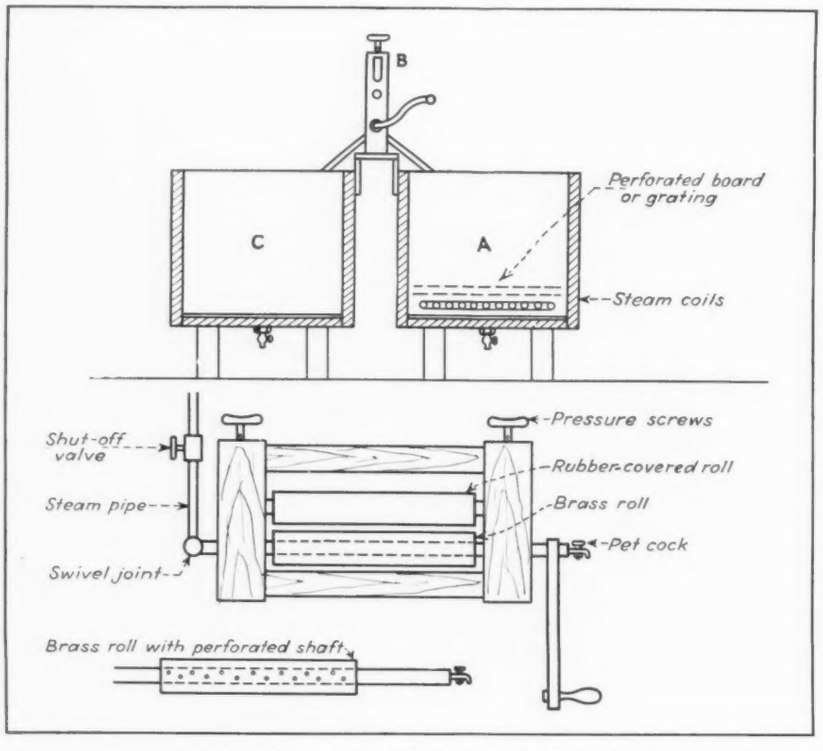
Equipment, formulas, and methods for treating sewing and slip-stitch types

By HENRY MIEDENDORP, Jr.
Textile Engineer

WAXED SILK MACHINE-TWIST sewing threads are used by the manufacturers and tailors of better-grade men's clothing, while slip-stitch threads are used by neckwear manufacturers. Slip-stitch threads are so named because of the fact that they slip, and do not break, when subjected to strain when the tie is knotted and pulled. There are, besides the large thread manufacturers, many small thread converters who put out these waxed threads. Most of such threads, especially the slip-stitch, are put up in needle-length size skeins, 1-oz. to the package.

The equipment necessary properly to apply a wax finish to such threads consists of a tub or box to hold the hot wax solution, a converted clothes wringer, and a box or tub to receive the skeins as they pass out of the wringer. Unless a large quantity of thread is to be processed daily, a small outfit will be suitable and can be handled by one operator. As a rule, thread manufacturers who manufacture large quantities of waxed threads have two sets of equipment—one for use in waxing blacks and colors, and one for use in waxing white. If this is not done, care must be taken to see that the tubs and wringer are thoroughly cleaned after waxing black or colored threads before putting through white threads.

DETAILS OF EQUIPMENT. A rough sketch of the equipment is shown in the accompanying illustration. The box or tub, *A*, should be square, either of copper, copper lined, or of Monel metal. Any small dye tub of such description is suitable and generally used. A steam coil, of sufficient size to heat and keep the wax bath from solidifying should be placed in the bottom of tub. This heating coil should be of the closed type, not perforated, so as not to allow steam to come into contact with wax bath. If a perforated coil were used, steam would come in contact with the bath, together with a certain amount of water, and would cause a variation in the strength of bath each time a batch is put into work. Above the coils there should be placed a removable perforated wooden bottom-board to protect the silk skeins and keep them from coming in contact with the steam coil.



Equipment for waxing silk threads in skein form

The wringer, *B*, is an ordinary clothes wringer, which can be purchased in any department or hardware store. After purchase, the bottom or driving rubber roll is removed and replaced with a hollow brass roll. This roll can be made from a piece of heavy pipe, fitted with a piece of hollow steel pipe, with that part of the shaft or pipe which is located inside the brass roll perforated with a number of ¼-in. holes to allow steam to escape and heat the roller. The ends of the roller should be closed, forming a shell around the perforated shaft.

The shaft, on the side opposite to the driving side, should be connected with a live-steam supply pipe by means of a swivel joint. Where a small amount of yarn is to be waxed daily, or at one time, the wringer can be hand driven by means of the handle generally used on the hand clothes wringer; otherwise the drive roll can be connected for power drive by the attachment of a pulley. On the end of the shaft where the handle or pulley is located the shaft should be fitted with a small petcock for use in blowing out collected water and cold air; otherwise the roller will become air-bound and will not heat up properly.

The reason for this hot roller is to obtain a uniform amount of wax on the skeins. Squeezing out skeins between two cold rollers invariably causes heavy wax spots or lumps on the thread. The hot-roll method has been proved successful through many years of operation and most silk thread manufacturers wax their threads in the skein and with similar apparatus.

In front of the wringer should be placed another box or tub *C*, to receive the skeins after they pass through the wringer. This tub can be either a wood or metal dyebox, fitted with an outlet at the bottom for emptying.

TYPICAL WAX FORMULAS are as follows:

For black and colors use a mixture of 1/3 beeswax and 2/3 paraffin.

For special heavy whites use a mixture of 3/4 beeswax and 1/4 paraffin. Use light-colored beeswax on whites.

In preparing both of the above formulas, the beeswax and paraffin should be first melted up separately and then thoroughly mixed together before placing the mixture in the soaking tub.

Another formula for blacks and colors is as follows: (a) 90 grams carnauba wax, 10 grams oleic acid, and 10 grams triethanolamine. (b) 6 grams caustic soda (90%) and 24 grams water. (a) is melted; (b) is mixed together and heated; (b) is added to (a) slowly with stirring; and the mixture stirred together until the whole mass begins to solidify.

One part of this mixture disperses easily in five parts of boiling water, giving about the proper consistency of solution to be used for soaking the skeins. Variations in the consistency can be made according to the result desired. The above formula is given as a basis from which to work; any amount can be made, using the same proportions. Some manufacturers obtain good results by treating the skeins in a bath in carbon tetrachloride before waxing, but this is not absolutely necessary.

The waxing method is as follows:

1. Heat up bath wanted and fill soaking tub *A* half full, keeping bath in a hot, but not boiling, state by opening valve of steam pipe leading to the heating coils in bottom of soaking tub. Do not allow the mixture to boil.

2. Prepare skeins for waxing by chaining them together with the aid of heavy, soft, cotton twine. Don't tie skeins too close together; have cotton twine form a short connecting link in the chain.

3. Proceed to feed chain of skeins into waxing bath by hand, crossing layers to avoid tangled skeins. See that all skeins are submerged in the bath and allow them to remain so for at least 15 min. in order to absorb the wax.

4. Proceed to feed chain of skeins through wringer, adjusting the top or pressure roll (of rubber) according to the amount of wax desired on the thread.

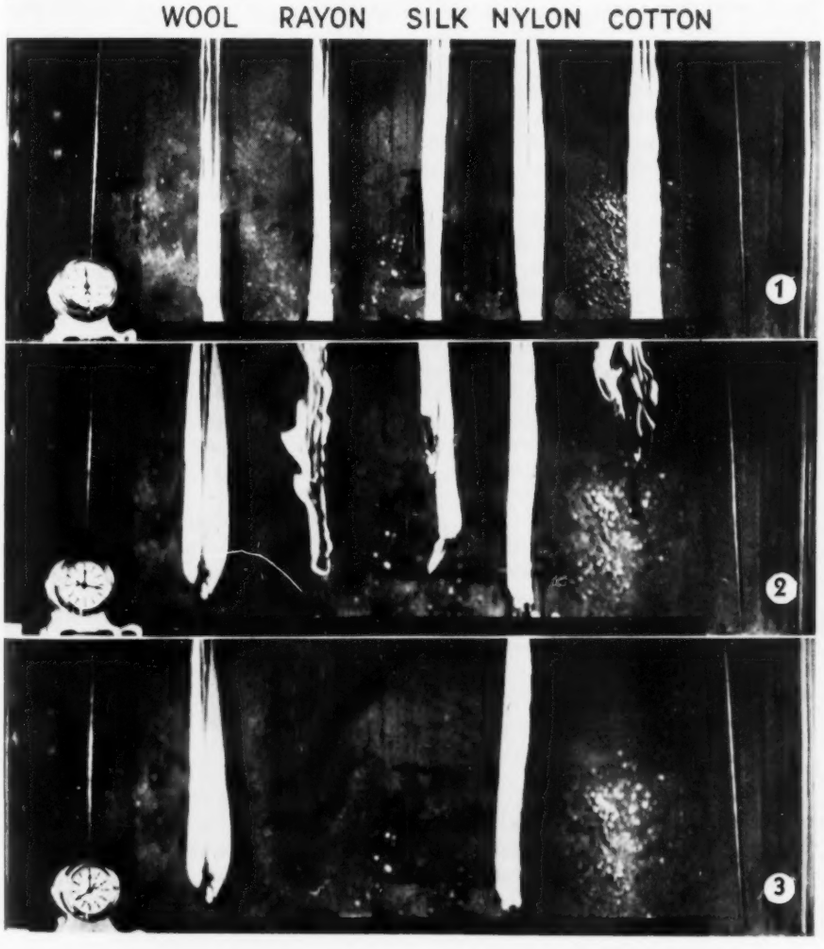
5. After passing skeins through the wringer into receiving tub, the skeins should be unchained by cutting or untying connecting cords. Next skeins are given a gentle shaking out by hand and then hung up to dry on poles. Do not hang skeins in a hot drying room, but in a room of ordinary temperature where there is some circulation of air.

For obtaining an extra hard or stiff wax finish fill the receiving tub, *C*, with cold water; pass the skeins through the wringer into the cold water; and remove skeins from water, shake by hand, and hang up to dry.

After putting through a lot of any color, the wax bath can be drained out of soaking tub and put aside to be used again. Both boxes and wringer should be thoroughly cleaned after use. When the wringer is not in use, small wedges should be placed between the brass and rubber rollers.

As wax tends to change the color of thread slightly, it is always good policy, when sending a lot of thread to the dyehouse to be dyed to sample, to strip the wax from the sample.

Flammability of Fibers



FLAMMABILITY TESTS on fabrics made from several natural and synthetic fibers were carried out recently in the laboratories of the Associated Factory Mutual Fire Insurance Cos. Results of those tests as reported in the September issue of the organization's publication, *Factory Mutual Record*, are shown in the accompanying illustrations and text.

The tests were carried out as follows: Two-foot fabric strips of wool, rayon, silk, Nylon, and cotton, three strips to a group, were suspended vertically over a perforated gas pipe burner, and were ignited simultaneously. As can be seen from the photographs, the cotton was consumed within 20 sec.; the rayon a few seconds later; the silk next; but flame showed no tendency to travel up the strips of wool or Nylon. The Nylon softened and melted where it was exposed to flame, and, although some of it was burned, it showed no tendency to keep burning.

A small pile of Nylon waste was ignited only after continued exposure to a bunsen flame and burned with only mild intensity.

Ratings of relative combustibility of the fibers tested are as follows: 1, Cotton. 2, Rayon. 3, Silk. 4, Wool. 5, Nylon.

Fig. 1. Test set-up showing fabric strips with bottoms touching perforated gas burner

Fig. 2. After ignition, the cotton burns readily, rayon and silk less so, and wool and Nylon hardly at all

Fig. 3. Flame did not travel up the strips of wool and Nylon, whereas the others were eventually consumed

Reducing Accidents

In mills through employee cooperation stressed at National Safety Congress

REDUCTION OF ACCIDENTS in textile plants was discussed in two afternoon sessions by the Textile Section of the National Safety Congress & Exposition, held recently in Chicago. The Textile Section was presided over by general chairman, E. A. Roberts, of American Mutual Liability Insurance Co., Atlanta, Ga. Speakers emphasized the need for employee cooperation in the attainment of low-frequency accident rates, and outlined various methods used to stimulate employee interest in the safety programs.

The first speaker was Phil J. Monroe, of Mooresville (N.C.) Cotton Mills, whose topic was "Methods of Developing a Competitive Safety Program." Mr. Monroe outlined the beginnings of his company's safety program, telling of cooperation received from the North Carolina Industrial Commission in the form of classes in first aid conducted for employees. A contest produced the slogan "More Safety for Moore Workers," and brought its writer a prize. "At the beginning of our safety drive we had attractive bulletin boards put up in each department," said Mr. Monroe. "These are all-purpose bulletin boards, but we see that notable safety posters are displayed at all times and are changed frequently.

"To arouse a competitive spirit, we knew we would have to have some method to show employees how they were progressing. We designed for each department a small sign which had an attractive display for our new slogan and also the lettering: 'This department has worked . . . days without a lost-time accident.' As interest began to grow, we thought it would be good to offer another prize."

Mr. Monroe described a plan whereby each member of a department which ran for a month without a lost-time accident received a theater ticket. A new set of safety rules was drawn up, based on and embodying suggestions solicited from overseers. The new rules were printed in a booklet, a copy of which was given to each employee.

"After these booklets had been in their hands for several days, I posted a notice on the bulletin boards to the effect that someone was coming through the mill to test them on the group of rules, and if they could give them from memory and had their book with them, they would be given fifty cents. I gave them a week to learn the rules, and one morning I set out with my fifty-cent pieces. Of course, I could not ask them all; however, I tried to ask as many as time would permit. I gave away about $25, and we feel that it was well worth the money.

"We have safety meetings at least once a month in each department. Every problem is gone over thoroughly, and everyone in an official capacity in our organization cooperates fully.

"As a result of this program we have reduced our lost-time accidents from 29 through September, 1939, to 1 through September, 1940."

"TEXTILE SAFETY Through the Plant Nurse" was the topic chosen by Miss Frances Bethune, plant nurse of Firestone Cotton Mills, Gastonia, N. C.

"Each time an employee contacts the nurse, an opportunity presents itself for her to gain his confidence and create good will," said Miss Bethune. "It is of prime importance that the nurse show a genuine interest by giving him adequate care, by taking a complete history of how and where the accident happened, and by giving him specific instructions as to further treatment. He will leave the dispensary with the thought in mind, 'That nurse knows her business.'

"Most industrial nurses could tell you of numerous cases in which the employee did not realize he was headed for trouble when he told the story of some simple ailment, while the nurse, being trained to recognize early symptoms, saw the danger and was able to warn him in time to arrest his case and bring about a complete recovery.

"Where women are employed, it is often easier for the nurse to suggest the proper type of clothing than it is for a department foreman to do it. Proper clothing on the job and cleanliness are first class aids to safety."

An imaginary trip through his company's plant was outlined by John J. Burger of W. J. Dickey & Sons, Oella, Md., in his talk on "Eliminating the Causes of Textile Accidents."

"Our first stop is in the yard at the loading platform," said Mr. Burger. "Here we meet Donald, and ask him what methods he is using to eliminate the causes of accidents. 'Good housekeeping is the solution to 90% of the problem,' he says.

"Our next stop is in the dyehouse, which is presided over by Otis. Replying to our question, his answer is, 'Advance planning and personal protection for my men.' He points out that proper production requires advance planning and that safety works the same way.

"Our next stop is in the mixing and picking department, where we meet Bill. We notice his safety record of 525 days without a lost-time accident. Asked for the answer, Bill replies, 'Every morning before starting work, I call my men together and say to them, "Remember our safety record, keep it clear today." '

"Going upstairs to the carding department, we find Joe. He tells us that education, in his opinion, is the best preventive method. He tells us that his method consists of four steps. First step is telling the man in simple language how to do the job the safe way. Second step is to show him how to do the job the safe way. Third step is to test him out. Fourth step is to check him.

"We now enter the spinning room where Harold gives us his views on the subject. A little psychology seems to be this man's method of eliminating the causes of accidents.

"Our next stop is the weave room where we meet Jack, who tells us, 'Well guarded machinery and good housekeeping are my methods.'

"By the personal appearance of the owners and superintendent at the department safety meetings, the management indicates its sincerity and gives its approval to the methods employed in eliminating the causes of accidents."

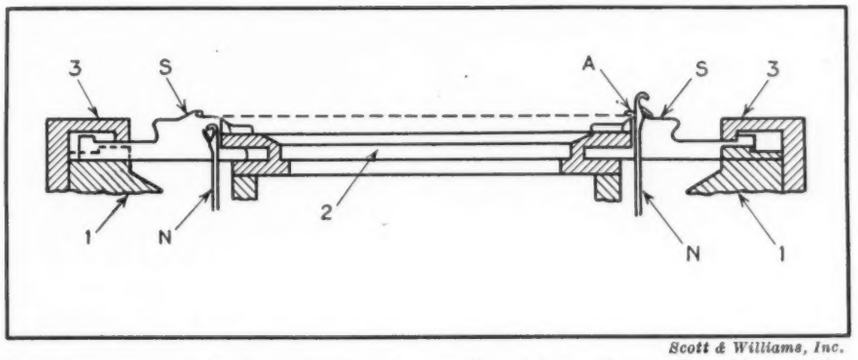
Others who spoke before the group were Ralph I. Sturtevant of Shelton Looms, Rocky Mount, N. C., who talked on "A Competitive Safety Program That is Working"; Ramone S. Eaton of American National Red Cross, Washington, D. C., whose subject was "Accident Prevention Through First Aid"; and S. C. Hickok of Pacific Mills, Print Works Div., Lawrence, Mass., who spoke on "Safety Successes in the Textile Industry are Recognized." In addition, a round table discussion of the methods of maintaining interest in accident prevention programs was led by Chairman Roberts.

Officers of the Textile Section elected for 1940-41 are W. B. Weaver, Marshall Field & Co., Spray, N. C., general chairman; Frances Bethune, Firestone Cotton Mills, Gastonia, N. C., vice-chairman; and John J. Burger, W. J. Dickey & Sons, Oella, Md., secretary.

FIXING HOSIERY MACHINES

CIRCULAR MACHINES—Chapter VI (cont'd) Sinkers and Cams

By JULIAN W. HUGHES



Scott & Williams, Inc.

Fig. C7. Correct timing of sinker to needle: sinkers, *S;* needles, *N;* outside sinker ring, *1;* inside sinker ring, *2;* sinker cap, *3;* correct timing of sinker, *A*

SINKER CAMS. In the course of time sinker cams will become worn and affect the movement of the sinkers; this, in turn, will affect the quality of knitting, even to the extent of causing drop-stitches. It is important, therefore, to see that the cams are kept in accurate adjustment. If a cam is found to be badly worn or rough, it should be replaced, as burrs or nicks in the cams may bend or break the sinker butts.

The inside sinker ring is simple in construction, its only function being to support and guide the sinkers. Accordingly, it will give no trouble if well lubricated and kept clean. On the other hand, if lint or other foreign matter finds its way into the slots and is allowed to remain there, the slots will wear unduly. Regular cleaning will prevent much trouble. When the slots become worn enough to allow any noticeable play of the sinkers, a new ring should be installed. What has been said in regard to wear and obstruction by foreign matter on the inside sinker ring applies equally well to the outside sinker ring.

One of the most common causes of wear is grit or grime working its way into the slots. This is especially true where the machines are set on a rough concrete floor. A good way to keep grit from accumulating is to flush the inside and outside sinker rings with sodium hydroxide solution. The solution can be applied with an ordinary oil can, and worked out by turning the machine by hand. This will also soften and bring out any accumulations of lint and gummed oil. Cleaning by this method at regular intervals will prolong the life of sinkers, and, in the long run, will save work for the fixer.

The purpose of bumper screws on the sinker cap is to time the radial movement of the sinkers in both directions while the cylinder is reciprocating during knitting of the heel and toe. Once the inward movement of sinkers is correctly timed, these screws should not be tampered with. Adjusting these screws in an attempt to remedy unsatisfactory stitch formation in the heels and toes is bad practice; it is likely to result in heels and toes which are knit too tightly, and which cannot be dyed evenly or boarded smoothly. When the stitch needs adjusting during the reciprocal knitting, it will be effected by raising or lowering the right-hand stitch cam.

The correct timing of sinkers to needles is that shown in Fig. C7. It will be noticed that the sinker has moved inward until the back of the throat is even with the back of the needle after the needle has received the yarn, drawn the loop, and is just starting to be raised by the end cam to clear the stitch. It may be possible to vary this position slightly, but it should be attempted only as a last resort.

REPLACING NEEDLES

(Addenda to Chapter V)

Three common types of latch needles are shown in Fig. C8. For use on Model HH half-hose machines, the spear-pointed needle, such as is shown at *A* is suitable, this type of needle passes readily through the make-up loops during transferring and plates satisfactorily. For use on ribbers which are not designed to plate, the non-turnable rivet type of needle shown at *B* gives excellent results; with this type, there is little or no danger of either loose or stiff latches. For use on Banner split-foot machines knitting women's hosiery or half hose of fine texture the streamline-latch type of needle shown at *C* is excellent; this type permits small loops to pass over the latch with a minimum of strain. There are several other types of latch needles which are being used with good results on various models of circular knitting machines, and selection of specific type for a particular model of machine is largely a matter of personal preference. It is important, however, not to use different types of needles in the same cylinder.

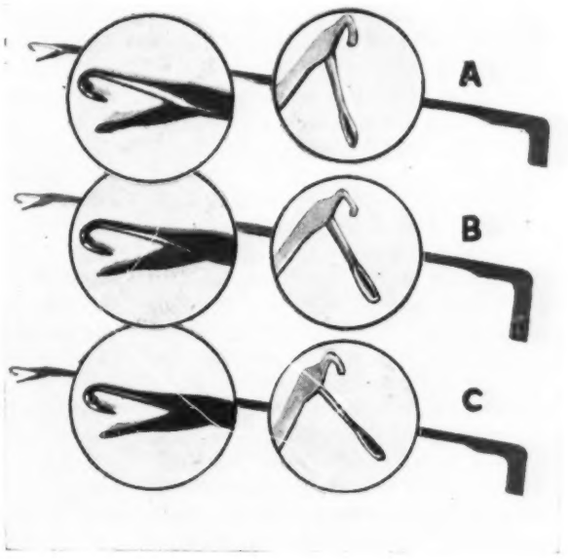


Fig. C8. Three common types of latch needles: *A*, spear-pointed needle with short butt; *B*, non-turnable rivet needle with long butt; *C*, streamline-latch type of needle

FIXING KNITTING MACHINES

FULL-FASHIONED MACHINES—Chapter VI, Jacks and Beds

By WALTER A. SIMOND

THE JACKS should be carefully centered between the dividers; if they have a full bearing on the sinker butts, both the sinkers and jacks will last longer and wear more uniformly; and good care will prevent many lines in the fabric that will surely occur otherwise. The following recommendations for oiling jacks and other information in this chapter inclosed in quotation marks are abstracted from the February and March-April, 1934, issues of the Reading Record.

"It is important that jacks be oiled at least every two weeks. The oil used should be either a high grade paraffin-base light machine oil, non-compounded needle oil, or a highly refined white mineral oil. Asphaltic base oils should not be used, as they contain tar products which have a tendency to gum and cause formation of scum. Best results are obtained when the oil is applied from the sinkers.

"Place the oil on the sinker-backs by means of a well-saturated brush after the same manner of placing the kerosene in the cleaning operation. If the oil can is used for the purpose, care should be taken to see that an even flow of oil is obtained as the spout is drawn across the sinker head. A small amount of good non-gumming oil used often and regularly will prove much more beneficial than an excessive amount of poor oil applied only at long intervals."

JACK BEDS. "When the jack beds are originally placed in the machine, any difference in size is so small that no effect is produced in the fabric. However, it is impossible to have these parts wear in an absolutely uniform degree; consequently when sinker, divider, and needle lines appear in the fabric, it is advisable to check over the jack-bed construction. If, on any particular knitting head, after making sure the sinkers and dividers are not responsible for the appearance of the irregular lines in the fabric, one should remove the jack bed and check the jacks for uniformity of size, wear, and for straightness. Remove all badly worn or bent jacks and replace with others that compare in wear with those remaining in the head. It is of importance to note here that any such jacks that are removed should not be replaced with new jacks. Such replacement is more likely to cause lines than to stop their appearance because they will, in all probability, carry their respective sinkers further forward than the other jacks and so result in the formation of longer loops. The best plan is to fill one bed or more with new parts and use the old ones that still appear to be in good condition for substitution in beds containing old parts."

Perfect jacks will sometimes bind in the combs because the partitions of the comb are bent or twisted, and they must be straightened until every jack is free. Slight bends may be straightened with a screwdriver in the hands of a skillful fixer; but for large bends or twists, the partitions must be removed from the bed, and straightened or replaced with new partitions—which may be used safely among old ones. In straightening the partitions it is best to check diagonally with a steel scale.

"Jack beds that are clogged with grease and dirt frequently result in the formation of irregular lines that are often attributed to the sinkers and dividers themselves. Jacks should, therefore, be cleaned at least once a month to insure smooth operation at all times."

CLEANING JACKS. "Of several methods in vogue today for cleaning jacks, it is felt that probably the easiest and most satisfactory method is to run a brush, thoroughly saturated with kerosene oil, across the backs of the sinkers, from which place the kerosene oil will penetrate the jack beds and loosen the scum and dirt on the surface of the jacks. After the oil has been given a short period of time in which to act on the dirt accumulation, again saturate the jacks with kerosene in order to flush the loosened scum and dirt from them. It is better to let this accumulation run off naturally, rather than to use air pressure for blowing it off. If the latter method is attempted, it is probable that small particles of grit will get between the slots of the jack bed and the jacks, and in this way cause the affected jacks to be frozen in the slots or bent out of line with the sinker back. This condition usually results in a smash and should be carefully avoided."

Good results can be obtained by cleaning jacks, jack beds, and sinkers with a strong solution of caustic soda; but care must be taken in its use. Wear rubber gloves, keep the arms covered, do not breath the fumes or get it on wool clothing. The jacks should always be removed from the beds when this method is used. Place the jacks from a bed in a pail, then the caustic, and about 2 in. of hot water. Stir the jacks with a long stick until they are bright; then let in a stream of boiling water and stir until the overflow has washed the caustic away; empty the remaining water; and wipe the jacks dry while they are still warm. In cleaning the beds, stand the bed on end in the solution and rub with a swab tied securely on the end of the long stick; then change ends with the bed and repeat the rubbing, after which the bed is laid across the top of the pail and flushed from both sides with the stream of boiling water. Wipe off and shake out all the water, and when the bed is dry, oil it well before putting the jacks in place. In case the solution accidentally gets on the hands, have a handy pail of cold water to which a little acetic acid or vinegar has been added. This neutralizes the caustic and stops the burning.

THE JACK-SPRING BAR must be periodically readjusted for best results in the fabric. The pressure of the jack springs must be uniform across the individual heads, and the bars require tightening as the pressure wears off.

"Previous to the incorporation of the spring bar in the construction of the jack bed, uneven sinker and needle wales were caused by the sinkers flying back or receding after being pushed forward by the jacks. The spring bar did not entirely eliminate the trouble, but has resulted in the production of a higher quality fabric, especially from the modern high-speed machines. However it is important that the jack springs be correctly adjusted and aligned with the jack butts. Otherwise their usefulness will be entirely nullified.

"The spring bar must exert the correct amount of pressure on the jacks in order that no sinkers may be broken from this source. Too little pressure will allow the sinkers to fly back and the whip-like action of the sinker nose as it jumps back causes the breakage of this part. Too much pressure will drive the sinkers against the verge-plate and result in breakage of the sinker in front of the butt."

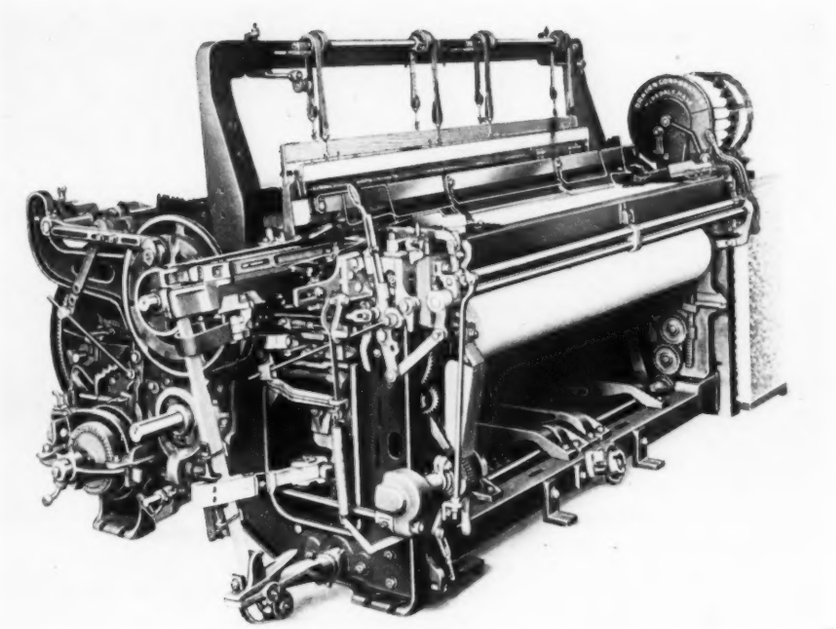
TEXTILE EQUIPMENT NEWS

Cotton Heavy-Goods Loom

For weaving heavy cotton fabrics up to and including light duck, and in widths up to 72 in., Draper Corp., Hopedale, Mass., has announced the XP Model loom. The new model is said to have extra weight and strength beyond all requirements, plus a 20% increase in speed above previous looms of similar type. Framework alone is 241 lb. heavier than that of modified Model D looms of the same width. Middle girts are braced directly to a heavy steel top girt; the breast beam is heavy, with a wide skirt, and each end is secured to the loomside by a three-bolt tie; and the reinforced hopper strand is secured by four bolts in a wide foot.

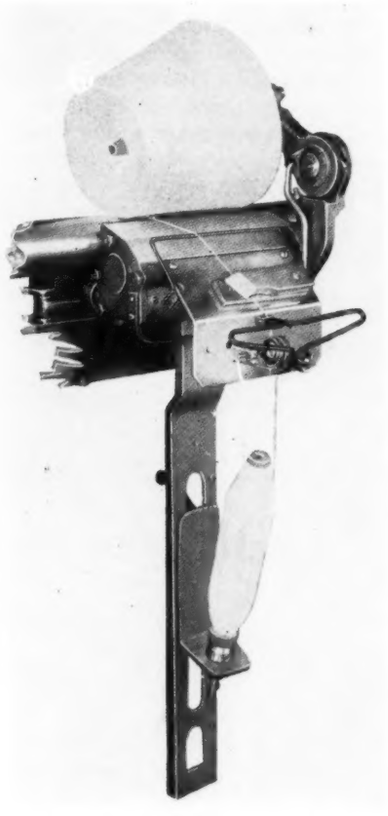
Harness motion can be motivated by either cams or a dobby, up to 20 harness, and shuttle-box constructions provide for sizes of shuttles ranging from a long shuttle carrying 9½ in. bobbin to a regular shuttle with 8 in. bobbin, it is stated.

Take-up is the high-roll cotton type, arranged to accommodate cloth rolls as large as 21½-in. in diameter. Let-off is the Roper type, and beam space allows use of beams with 26-in. diameter heads.



Model XP cotton loom (Draper)

The manufacturer states that the XP Model is being offered as replacement of the modified D and P Models for weaving cotton fabrics.



Automatic knitting-cone winder (Abbott)

Automatic Knitting-Cone Winder

For those who wind knitting cones, Abbott Machine Co., Wilton, N. H., has developed an automatic cone winder which is said to overcome winding speed limitations generally encountered with positive traverse winders and to make possible yarn speeds up to 700 yd. per min. This has been accomplished by use of small diameter, hardened steel cams, and light high-alloy steel alloy moving parts, the whole mechanism running in a bath of oil. As a continuation of the manufacturer's policy, each head is a complete unit.

The machine winds cones beginning with a 9° taper on the inside, gradually increasing the angle to 12° on the finished package. The taper is increased as the cone develops by hinging the package arm from the front and by setting spindle and arm in an angular relation. As the cone grows, spindle and cone are moved endways to give a well-curved base and concave top. This prevents yarn from cobwebbing or piling up at the edge of base or top, it is stated.

Possible production on the winder is said to run as high as 1,200 bobbins per hr., all of which can be handled by one operator. Operators duties consist of feeding magazine and doffing full cones. A full-package indicator is provided to tell operator when cone is ready for doffing.

It is said that the magazine can be modified to accommodate practically any kind of spinning or twisting bobbin. Two knotters are furnished with each machine and can be interchanged by a simple thumb-screw operation. Other attachments, such as tension devices and slub catchers, are standard items as used on Abbott's other machines.

Textile Brushes

Following the introduction about three years ago of an entirely new type of brush for use on thread dressers, the Fuller Brush Co., Hartford, Conn., has developed several modifications of this brush for application to cotton and wool cards, steaming machines, burr pickers, velvet and plush finishing machines, etc. These brushes, known as Steelgript brushes, are an adaptation of that company's Steelgript loom and other hand brushes. With the exception of the card brush, they retain the unique feature of the original Steel-

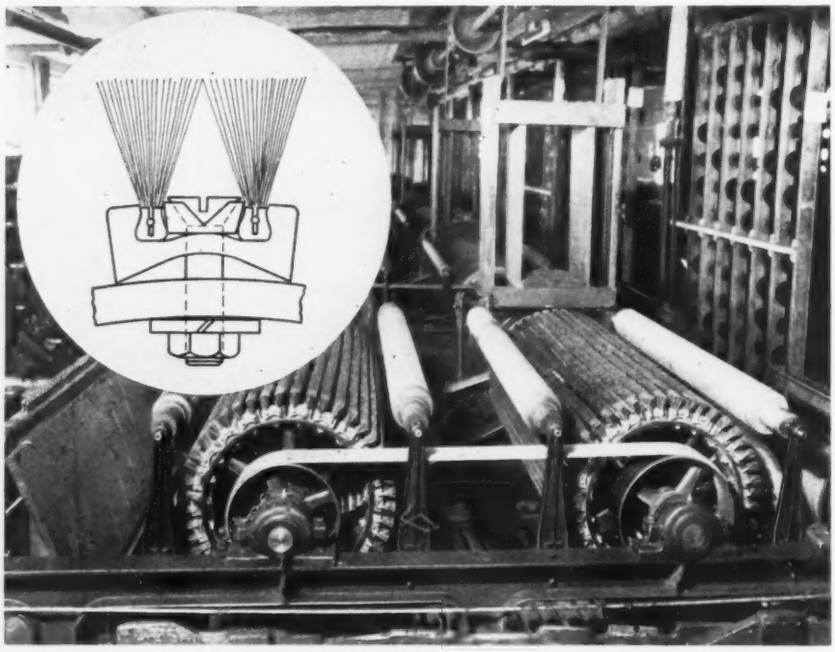


Fig. 1. Thread dressers equipped with Steelgript brushes; insert shows details of brush construction (Fuller Brush)

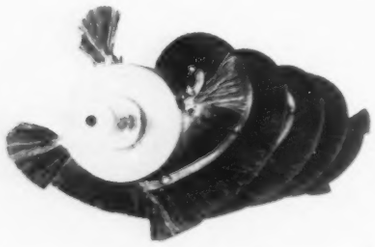


Fig. 2. End view of card brush (Fuller Brush)

gript construction in which the tufts of brush material are held in a rigid steel-backing that can be slid and locked securely in a metal core which, in turn, can be fastened into machinery by simple attachments. An installation of the brushes on a thread dressing machine, with insert showing details of brush construction, is illustrated in Fig. 1.

The card brush strips, on the other hand, consist of preformed spiraled Steelgript brush strips which mill maintenance men can attach to the present wood cores by means of special screws furnished with the brush strips. An end view of a card brush showing simplicity of fastening method is given in Fig. 2.

Among the advantages cited for the Steelgript construction are the following: rigid metal backs are practically indestructible and are not affected by atmospheric changes or contact with liquids employed in textile processes for which the brushes are used; ingenious method of holding bristles in metal backings greatly reduces shedding of bristles; greater density of bristles and their scientifically controlled distribution in unit strips result in a uniformly solid brush giving better performance and serviceability; lowers maintenance costs and speeds up brush repairs and replacements. The particular advantages claimed for the spiral brush strips for cards include quick replacement of worn brushes, which does not require skilled mechanic, but can be made by the machine operator; and dense, continuous formation of bristles, which gives more thorough cleaning of stripper and hence leads to better carding. It is stated that cylindrical Steelgript brushes on felt-nap brushing equipment result in superior nap-laying, while Steelgript dye-applicator brushes for applying pigment colors to corduroy, velveteen, etc., are more easily and thoroughly cleaned when changing from one color to another.

Up-Twister

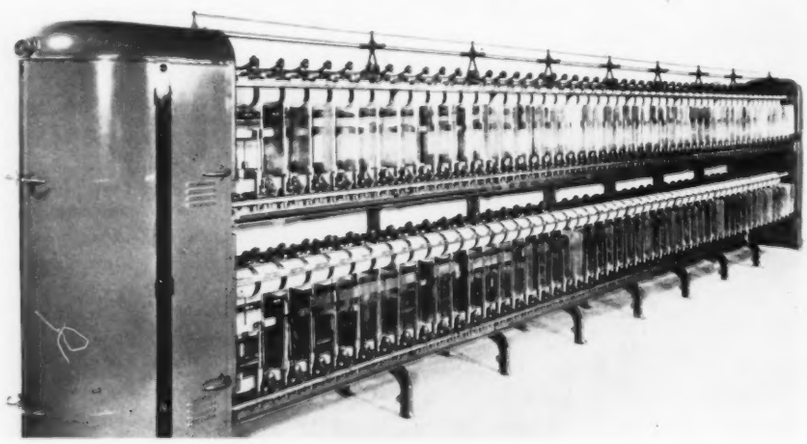
To meet the exacting requirements created by the demand for large packages and the extensive employment of combination yarns, Atwood Machine Co., Stonington, Conn. has developed and is now offering the Model 110 twister. Extra large take-up rolls and machined bobbin hangers replace the old fingers; spindle construction has been greatly improved, it is said, and spindles are equipped with a brake designed to prevent excessive pressure on the whorl. The gear unit is ruggedly constructed, and can be changed from S to Z twist in less than one minute. The twist unit is equipped with spiral bevel gears, and is lubricated by an oil pump built in as an integral part of the unit; all oil leakage is eliminated, it is stated. Both gear and motor ends of the machine are totally inclosed; the inclosures are designed for quick and complete accessibility to interiors.

The traverse mechanism employs an extra-large cam operating in a bath of oil, and said to be extremely smooth with practically no backlash. Traverse bars are constructed of a box-shaped steel to prevent dirt accumulation. A small button is provided for quickly and accurately setting traverse length; and it is stated that a wide range of traverses are possible without changing cams.

The motor is tripod mounted on ball-bearing wheels, and belt tension is controlled by a heavy mainspring take-up.

General-Purpose Polyphase Motors

Development of an entire line of completely new general-purpose, polyphase induction motors which are expected to find wide application in the



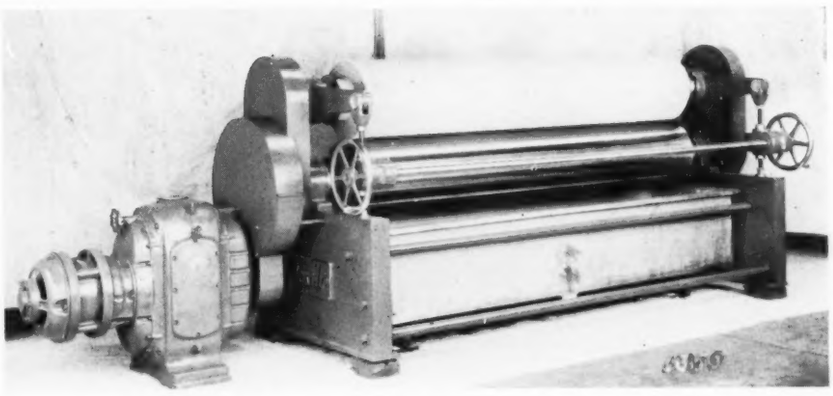
Up-twister (Atwood)

textile and other industries has been announced by General Electric Co., Schenectady, N. Y. Known as the Tri-Clad motor, this new motor is said to afford more complete protection than was heretofore available except in specially inclosed models. Other features of the motor in all its ratings, include improved insulation of current-carrying parts, improved bearing design and lubricating arrangements, and streamlined appearance.

In place of the conventional open frame, it makes use of a cast-iron frame of the box type. The end shields are designed to match the frame and are inclosed above the centerline. This combination of frame and end shields minimizes contact of vital motor parts with foreign material and protects against accidental blows. Openings for the entrance and exit of cooling air are so located in the end shields and frame as to afford greater protection against entrance of falling liquid or particles than existed in previous models of open motors.

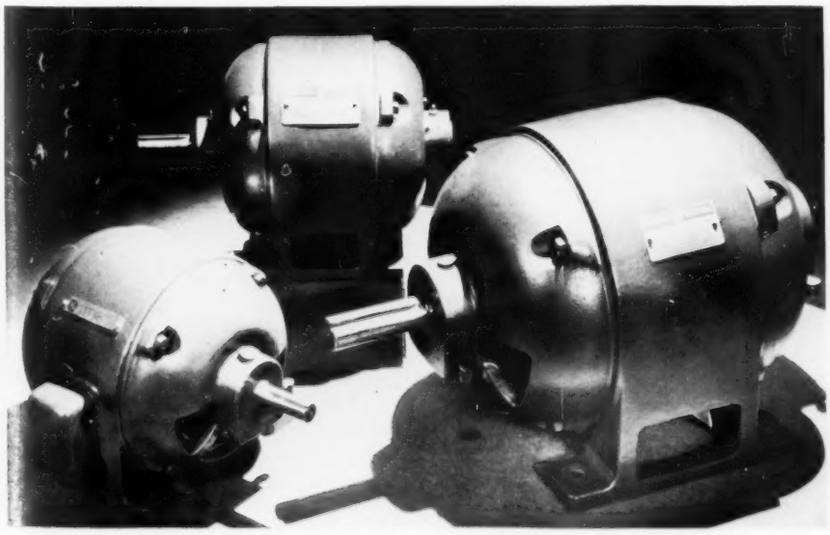
Use of Formex magnet wire was adopted because of its excellent insulating properties, toughness, and resistance to heat and solvents. The motor operates well within the standard 40° C. temperature rise. Comparative ageing tests of Formex wire with ordinary type enameled wire are said to show a superiority for Formex in the ratio of 30 to 1. Motor windings are further protected by the application of an improved synthetic-resin varnish and a covering coat of Glyptal red.

Use of shorter bearings for a given diameter than have been used in the past results in less deflection of the shaft inside the bearing. In order to maintain oil film over all parts of the bearing linings under heavy loads, a new spiral type grooving was developed for the new sleeve bearing.



Special heavy two-roll padder (Textile-Finishing)

Convenience features incorporated in the Tri-Clad motor include: new and wider conduit box, with unusually large working space, to simplify installation in close quarters; clearly marked terminals which permanently identify the leads; stator is reversible and allows the conduit box to be located on either side and up or down on side-wall mounting; ball-bearing motors can be operated vertically or mounted on a side wall; end shields can be easily changed to any one of four positions on the job; oil-filler gage can be located on either side; same assembly of shaft and rotor is used on many popular sizes of both sleeve and ball-bearing motors, permitting many sleeve-bearing motors to be converted to ball-bearing by changing only the end shields, bearings, and caps; a single spare rotor less bearings can be used for both ball- and sleeve-bearing motors; and end-shield cap screws are located on a 45° angle with the vertical for greatest accessibility in removing and reassembling the end shields, and knock-off lugs are provided to aid removal of the end shields.



Three members of new line of polyphase induction motors (General Electric)

Special Heavy Two-Roll Padder

A 2-roll padder with extra-heavy welded steel framework supporting an unusually wide arrangement of rolls has been announced by Textile-Finishing Machinery Co., Providence, R. I. The bottom roll is of heavy brass-covered construction on cast iron center and the top roll is rubber-covered on cast iron center; both rolls are fitted with a special slinger ring arrangement, and have ends and hubs protected.

The machine is anti-friction bearing equipped throughout with heavy spherical self-aligning roller bearings for the two main rolls and special balanced gear equipment on both sides, allowing for a positive drive between the top and bottom rolls. The machine is also fitted with a stainless-steel immersion box.

The main drive is through a motorized PIV unit and a wide variation in speed is said to be possible.

Pressure attachments are of compound lever and weight design, having all moving and rolling parts fitted with anti-friction bearings and with control of pressure by cross shaft, handwheels, and enclosed worm and worm gear units.

Useful Accessories For Textile Mills

Rubber-insulated pipe and fittings for transmission of chemicals were recently announced by Paramount Rubber Service, Inc., Detroit, Mich. From specially treated metal surfaces, rubber is built up to required thickness without seams or laps.

Visible-supply oilers for use on machinery which operates intermittently have been announced by Trico Fuse Mfg. Co., Milwaukee, Wis. Two models are available, one a wick-feed and the other a gravity-feed oiler. Wick feed is available in 1, 2, and 4 oz. capacities;

gravity feed can be obtained in 1, 2, 4, and 8 oz. sizes.

D-c motors recently announced by General Electric Co., Schenectady, N. Y., feature compactness and improved protection from external damage, and high resistance to impact and abrasion. They are available in constant-speed ratings from ½ hp. at 850 r.p.m. to 60 hp. at 1,750 r.p.m., and in adjustable-speed ratings from ½ to 15 hp.

For grinding and smoothing rubber, leather, or fiber rapidly and efficiently without danger of burning the work, Atlantic Abrasive Corp., South Braintree, Mass., announces a new wheel, designated Type B.C., made of patented synthetic bond. Grinding time is saved, and labor costs materially reduced, it is alleged. B.C. wheels are made in soft temper for grinding rubber only, and in hard temper for grinding and buffing leather, fiber, and similar materials.

Mercury switches designed to meet demands for larger electrical capacities and smaller overall dimensions are being introduced by Durakool, Inc., Elkhart, Ind. Type A-5M is said to have successfully withstood 750,000 operations on a 500-watt a-c. lamp load at an operating speed of 5 times per min., 24 hours a day, and performance of the A-10Z is said to be equally impressive.

Correlation of temperature, pressure, flow, or liquid level at a point remote from the point of measurement is the purpose of a remote pneumatic transmission system offered by Taylor Instrument Cos., Rochester, N. Y. The system will, it is stated, operate with instruments up to 1,000 ft. from the transmitter. It is said to eliminate hazards resulting from electrical circuits in explosive atmospheres.

Asphalt roofing made by a newly patented process, will be produced by Philip Carey Co., Lockland, Cincinnati, Ohio, according to a recent announcement. The new method is said to assure 98½% or more saturation of the felt-base material with asphalt, and thus eliminate blistering, sliding, and loss of protective mineral granule surface.

New Dyes and Chemicals

DuPont Products

E. I. du Pont de Nemours & Company announces the following new products: Polyform Scarlet 2 GF, a Polyform dye producing very yellow shades of scarlet similar to those of Pontamine Diazo Scarlet A; dyeings on viscose rayon are superior to those on cotton in wash fastness; clear white discharges are readily obtainable.

Polyform Blue 2 RF, a Polyform dye producing navy blue shades which are both redder and brighter in tone than those of Polyform Blue BRF; it possesses the outstanding fastness to washing particularly on rayon which is characteristic of Polyform colors; it discharges readily.

Ponsol Green 2 BL Paste, a vat color yielding a desirable intermediate shade of green which is particularly resistant to light, peroxide, and chlorine.

Base For Preparing Pine-Oil Disinfectants

Announcement of a new product, called NOPCO 1444, for use in preparing pine-oil disinfectants, was made recently by National Oil Products Co., Harrison, N. J. It is described as a light colored base. Among the advantages cited is the fact that simple hand mixing is all that is required to obtain a disinfectant of high pine oil content, it not being necessary to employ heat, caustic, rosin, or other chemicals.

General Dyes

General Dyestuff Corp. announces the following new products: Benzoform Grey N, a direct dye recommended for application to cotton and rayon; when after-treated with formaldehyde and acetic acid, it produces dyeings of good fastness to washing, fresh and salt water, and perspiration; good discharges can be obtained with Rongalite C.

Direct Brown G, a direct dye producing red-brown shades of good fastness to acetic acid, alkali, and ironing; fastness to water and perspiration is materially improved by an aftertreatment with Solidogen BSE.

Indanthren Black-Brown VA Paste, a straight vat color yielding chocolate-brown shades of very good fastness to light, washing, and chlorine.

Calco Colors

Calco Chemical Division, American Cyanamid Co. announces the following new products: Calcochrome Yellow CGW-100%, a chrome color, yielding shades of sufficient fastness to recommend it for use as the yellow component in Government shades on wool; it can be applied by the top-chrome, bottom-chrome, or meta-chrome method with little difference in shade or fastness.

Calcomine Chrome Brown BS, a direct color producing full brown shades on cotton, rayon, and uncarbonized reworked wool; dyeings are of fairly good to good fastness to light, good to very good fastness to fulling, and very good fastness to washing.

Conditioning Oils for Nylon Hosiery Yarn

Two new oils for conditioning and lubricating Nylon hosiery yarn have been announced recently by Quaker Chemical Products Corp., Conshohocken, Pa. Known as Nyl-O-Nol 10 and Nyl-O-Nol 1, these products are mixed with water for use, and form rich, white emulsions. They are slightly alkaline in reaction, non-oxidizing, non-gumming, and odorless. The solutions are used in the water pans on the full-fashioned hosiery machines. Nyl-O-Nol 10 is recommended by the manufacturer for mills running with low relative humidities, and, under such conditions, is said to provide proper softening of the yarn.

Nyl-O-Nol 1 is recommended for those mills that run with a high relative humidity to protect the yarn against the absorption of too much moisture. This is said to prevent the yarn from sticking on the carrier heads and in the carrier tubes and also to prevent the finished knitted fabric from showing too much tendency to curl.

It is stated that both products facilitate uniform knitting results and even stitch and that they scour out completely without resistance, thus facilitating even dyeing.

Elastic Resin

A new resin with the elastic qualities of rubber latex has recently been announced by the Rohm & Haas Co., 222 West Washington Sq., Philadelphia. Advantages cited for this resin are that it does not oxidize with age, does not develop an odor, and does not cause discloration of the fabric. The new resin can be used in concentrated form for coatings on fabrics, or in more dilute form for impregnating fabrics to produce a variety of very unusual finishing effects. It is a modification of the acrylate or RHoplex type. Like the other acrylate resins, the new product will be sold as a concentrated aqueous dispersion. It is stated that it produces films that are tough and durable, color-

less, odorless, and require no curing or special handling.

Three grades of the new elastic resin are available—soft, medium, and hard. Properties of the three types, as given by the manufacturer, are as follows: The softest resin in the series is the most elastic and rubber-like; while it is soft, it is not tacky; films formed by this resin do not soften with heat or become brittle and hard when cold; the soft resin is an excellent coating material for fabrics for producing tough, elastic films. The medium-grade resin produces a firmer and drier film that is not quite so elastic; it can be blended with the softer resin to obtain intermediate effects; it produces excellent coating effects, as well as a variety of unusual fabric finishing effects on rayons and cottons. The hardest resin in the series is outstanding for its complete resistance to solvents; in low concentrations this product produces unique finishes on spun rayon fabrics, as well as unusually soft, full, nonslip finishes on rayon satins and taffetas.

New Publications

Technology for Textile Men

HANDBOOKS OF TEXTILE TECHNOLOGY—No. I, Part I; W. A. Hanton, The Textile Institute, Manchester 3, England; 2s.

The first of a series of text books to be published by the Textile Institute, this book takes up the subject of mechanics with a study of the movement of machine parts. Parts II and III, and IV of Volume I will follow with studies of forces, stresses, strains and elasticity. This first book contains four chapters, 82 pages, which cover the following: movement of machine parts, rotary, linear, reciprocating, and oscillating, with definitions and units of displacement, speed and velocity; equations of movement with definitions and units of acceleration; and parallelogram of velocities with resultant component, and relative velocities. Included are many line drawings illustrating various points discussed.

Fundamentals of Blueprint Reading

SIMPLE BLUEPRINT READING WITH SPECIAL REFERENCE TO WELDING; Lincoln Electric Co., Cleveland, Ohio; 50¢.

While this book has been compiled and published primarily for welders, it contains information of value for any one concerned with mechanical construction. The book discusses perspective, isometric drawing, line of sight projection, point and line projection, dimensions, scale, broken views, screw threads, type of weld, size and shape of weld, etc.

Testing Standards

A.S.T.M. STANDARDS ON TEXTILE MATERIALS; American Society for Testing Materials, 260 S. Broad St., Philadelphia; $2.

Each of the 65 specifications of quality, tolerances, test procedures, and definitions developed by A.S.T.M. through Committee D-13 are included in this latest compilation, and, in addition, three proposed methods are published for information. Also included are abstracts of papers presented at committee meetings and valuable tables and data. For the first time, four standards for glass textiles are included; they cover glass yarn, fabrics, tubular sleeving and braids, and tapes. Again included are photomicrographs of common textile fibers, yarn number conversion tables, psychrometric table, and a glossary of textile terms.

"Cotton Standards" and "Spinning Properties of Cotton"

In reviews in our November issue of two Government publications—"Standards for Appearance of Cotton Yarn" and "Spinning and Fiber Properties of Pima, SXP, and A Pima—SXP Backcross"—reference was made erroneously to the Department of Commerce. Actually, both are publications of the U. S. Department of Agriculture, Agricultural Marketing Service, Washington, D. C.

Color-Blindness Test

PSEUDO-ISOCHROMATIC PLATES FOR TESTING COLOR PERCEPTION; American Optical Co., Southbridge, Mass.; $9.

These new color-blindness charts were compiled after months of research which began when it became virtually impossible to obtain reliable color tests from recognized foreign sources. This book of color perception charts now makes this country independent of Germany and Japan. Compiled as a result of the foresight of United States military authorities, the charts will replace as a national standard in this country the Ishihara test printed in Japan and the Stilling system of Germany. The latter is impossible to obtain due to the war; and only first editions of the Ishihara collection are considered reliable. The new color tests have been approved by the Surgeon-General. These color tests are invaluable for Army and Navy men, in transportation, and in numerous industrial operations. Their use in testing the vision of color mixers, color printers, and other persons who must have a nice discrimination of colors is obvious. The 46 charts come with a booklet of instructions which is self-explanatory.

First of Three

ELIZABETH AND SON, by Gladys M. Schuldt; Dorrance & Co., Philadelphia; $2.50.

This novel, the first of a trilogy, concerns an ugly woman with two consuming passions—cotton manufacturing, and her baby son.

Elizabeth was a strong-minded woman, physically unattractive, who had all the other virtues—thrift, domesticity, house-wifely ability. But she also had guile. And Elizabeth stopped at nothing to gain her two objectives: her own cotton mill, which she forced to become a successful one; and a son, who sickened and died. But Elizabeth knew what she wanted—and she stopped at nothing.

It is hard to sympathize with a heartless heroine whose selfish determination over-rides all in her path. But we have to admit she was a real pioneer in cotton manufacturing—and rose to affluence by using all the pioneer short-cuts. To those who are interested in cotton manufacturing of today, this book which tells of the beginning of the cotton mills of yesterday will be interesting. It is well written and is a good beginning for the threesome.

National Economic Policy

GOVERNMENT AND ECONOMIC LIFE, Vol. I by Everett S. Lyon, Myron W. Watkins, Victor Abramson. Vol. II by Leverett S. Lyon, Victor Abramson and Associates. Published by Brookings Institution, Washington, D. C. Price, Vol. I—$3.00; Vol. II—$3.50.

The Brookings Institution has done an important job in publishing these two books. And the authors have given an able and readable study of Governmental direction of our present economic set-up.

In Vol. I the activities of Government in economic life are broken in two parts. Implementation and Regulation. The former covers in a general manner the mechanisms of business enterprise as they develop our economy. The latter goes into regulation of business enter-

prise to uphold the economy established.

In Volume II a further analysis of Governmental implementation and regulation of private enterprise is undertaken, but instead of a general coverage, as in Volume I, the study is on specific business areas or specific time-periods of economic life which have been singled out for special Governmental treatment.

These two books, which should be treated as a single unit, should be given careful consideration by business men, and especially executives in the textile business, as they give one a broader understanding of conditions now developing in our national economic policy.

News of Suppliers

Textile Finishing Machinery Co., Providence, R. I., has made its Charlotte, N. C., office in the Johnston Bldg., its exclusive headquarters in the southern territory. This office will be under the direction of Arthur F. Black, southern district manager. Byram B. Scantland will continue to make his headquarters at Charlotte and will assist Mr. Black in representing the company in that section of the South which he has covered for the last three or four years. The company will assist its representation in the South by sending sales engineers or executives from the New York and Providence offices, as conditions may require. Samuel A. Moffitt, until recently a sales engineer in the Charlotte office, has been transferred in similar capacity to headquarters in Providence.

Steel Heddle Mfg. Co., Philadelphia. —Stockholders of this company tendered a testimonial dinner at Warwick Hotel, Philadelphia, Dec. 6 to John J. Kaufmann, president and general manager, and Robert J. Freitag, secretary-treasurer and sales manager. The former has a 40-year service record with the company, and the latter a 30-year record. Attending were about 100 guests, comprising the stockholders and their immediate families. A souvenir book with photographs of all the employees in the branch offices and plants at Philadelphia, Greenville, Atlanta, Greensboro, Providence and Montreal, was presented to Mr. Kaufmann and Mr. Freitag, illustrating the growth of the company during its 42 years of existence. Ernest K. Halbach, president of the General Dyestuff Corp. of New York, and vice-president of Steel Heddle Mfg. Co., acted as toastmaster. John Gwilliam and H. Walford Martin, directors of the company, had charge of the arrangements for the dinner.

JAMES B. GASKINS, now with Columbia Alkali Corp.

FRANK WALDO, market research specialist with Columbia Alkali Corp.

Robert Reiner, Inc., Weehawken, N. J. and **S. Blickman, Inc.,** also Weehawken, were erroneously reported in this column last month to have appointed an Atlanta, Ga., sales representative. Neither of these firms has appointed such representation.

Philadelphia Metal Drying Form Co., hosiery drying equipment, has removed its factory and office to Third and Ontario Sts., Philadelphia. The new plant is larger than the old one, and permits expanded operations and services.

Dri-Dux Co., Inc., New York, N. Y., has acquired exclusive manufacturing and sales rights on a new water-repellent process said to be applicable to all textiles. Capacity for processing 500,000 yd. daily are available. The Dri-Dux finish is said not to impair the original character of the textile and to withstand laundering and dry-cleaning with petroleum solvents.

Columbia Alkali Corp., New York, a division of Pittsburgh Plate Glass Co., has appointed James B. Gaskins to its technical service department. Mr. Gaskins has been manager of the Buffalo branch office of Commercial Solvents Corp. Frank Waldo is newly appointed market research specialist with the technical service department.

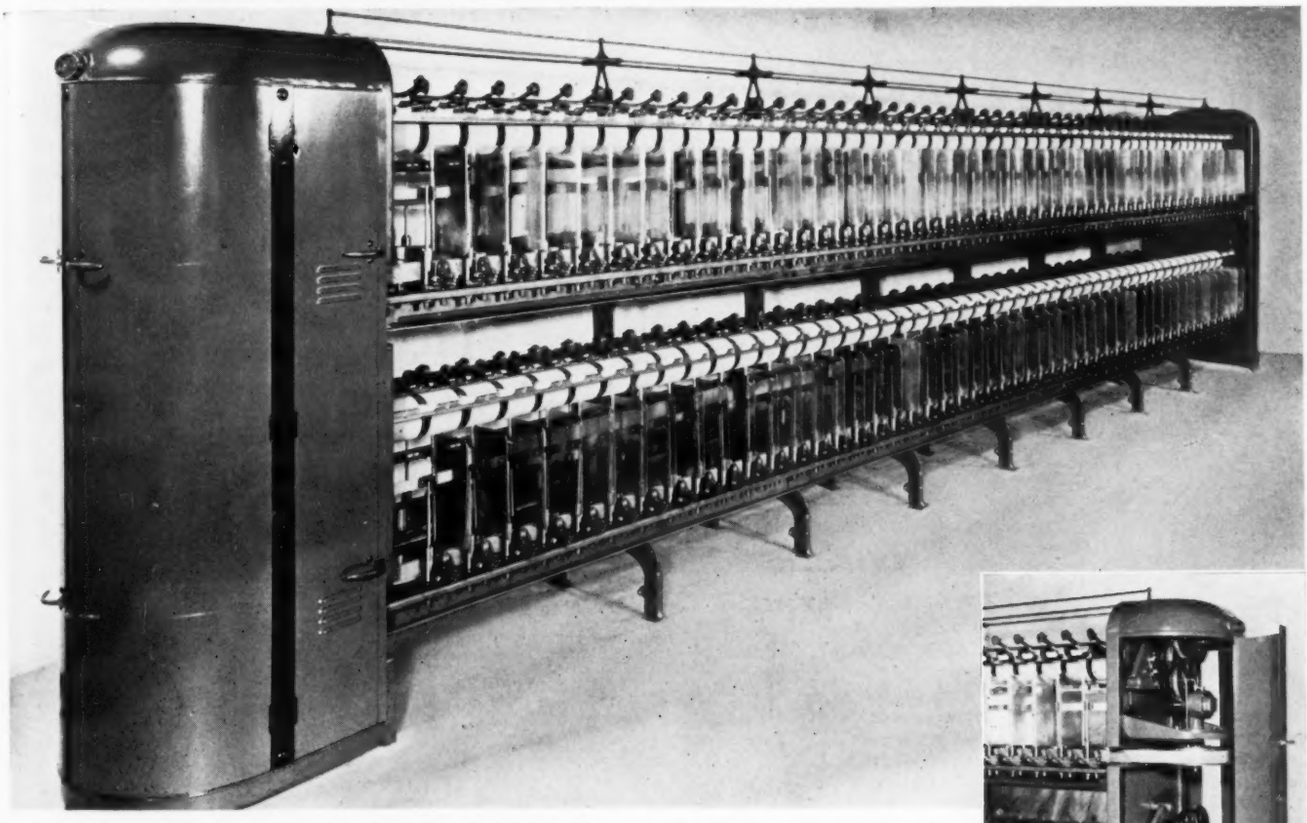
Libby-Owens-Ford Glass Co., Toledo, Ohio, has appointed J. Gazzam MacKenzie from the San Francisco office to succeed John S. Watson as Atlanta branch manager.

Ernst Bischoff, Ivoryton, Conn., has added Frank A. Decker, Ph.D. of Thompson, Conn., to its textile specialties department. Dr. Decker has made a special study of textiles and dyestuffs. Michael H. Roberts, of Stafford Springs, Conn., former president of the Textile Dyeing & Finishing Association, has also joined the Bischoff organization, representing them in the New England States.

General Dyestuff Corp., Charlotte, N. C., has completed new offices, laboratories and warehouse at 2459 Wilkinson Boulevard, Charlotte. The company has moved into its new building

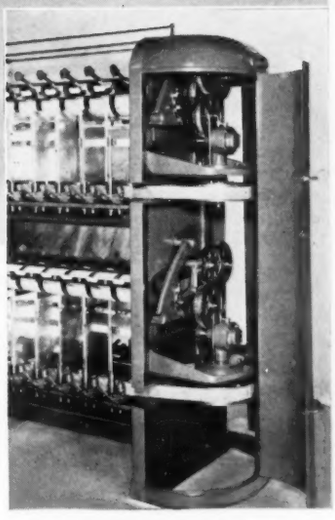
HONOR GUESTS at testimonial dinner: (left) John J. Kaufmann, president, Steel Heddle Mfg. Co., with the company for 40 years; (right) Robert J. Freitag, secretary-treasurer, Steel Heddle Mfg. Co., with the company for 30 years

ATWOOD ANNOUNCES



The New ATWOOD TWISTER
Model 110

Completely new in design and construction — a simpler, stronger, better machine, in every way capable of meeting the most exacting requirements of large, balanced package production of clean, uniform silk, rayon or combination yarns for 1941 and beyond.



The gear end of the New Atwood Twister — totally enclosed but easy to get at.

Equipped with

- improved spindle construction with resilient brake to prevent excessive pressure against whirl
- accurately machined bobbin hangers instead of old style fingers
- super smooth traverse mechanism with virtually no backlash, micro-adjustment of traverse
- totally enclosed drive, tripod mounted on ball bearing wheels and precise clock-type spring take-up control
- improved totally enclosed, quick change gear unit designed for permanently clean, dependable operation

For detailed information on the new Atwood Twister, Model 110 and its application to your present and future needs, get in touch with our nearest office.

THE ATWOOD MACHINE CO.

STONINGTON, CONN., U. S. A.

Sales Offices: WILKES BARRE • CHARLOTTE • LOS ANGELES

CALCO COMPLETES EFFLUENT PLANT—A new $500,000 effluent treatment plant was officially placed in operation at the Bound Brook, N. J. plant of the Calco Chemical Division, American Cyanamid Co. on November 7. Governor A. Harry Moore, of New Jersey, members of the N. J. State Department of Health and Sanitation, as well as various local and company officials were present at the opening. Picture shows F. M. Fargo, Jr., head of Calco at left, Gov. Moore at center, and other officials, leaving the building which houses the automatic control equipment. The development of the new treatment methods used in this plant, was outlined by Dr. V. L. King, technical director of Calco, at a luncheon attended by the Governor and the other guests.

from the old location on South Boulevard.

Glyco Products Co., Inc., has approved plans for a new building in Brooklyn, N. Y., consisting of administrative office, research laboratory and manufacturing division. New equipment of stainless steel is being specially designed. The laboratory will include additional pilot plant and pilot auxiliary equipment. There will be a three-car railroad siding, and two enclosed trucking pits. Frontage on the deep-water Atlantic Basin facilitate receiving and shipping by water. The administration building and research laboratory will be located at 228-236 King St., and the shipping and receiving departments will be on Pioneer Street. Operations will commence about Dec. 15.

Manuel Sontag, who left Allentown, Pa., to set up a mill in Bogota, Colombia, has now established a business of his own in Bogota, selling new and used textile equipment, rendering technical services and solving textile mill problems. Davis Meker is associated with him. His headquarters is at Edificio Salgado, Apartado Nacional 1237, Bogota, Colombia, S.A.

Textile Aniline & Chemical Co., has established offices and a warehouse at Everett Mill properties, Lawrence, Mass.

Mathieson Alkali Works, Niagara Falls, N. Y., is erecting a $400,000 plant addition to make chlorite.

American Cyanamid & Chemical Corp., New York, will build a two-story addition to its present Charlotte, N. C., plant, and an office building to be headquarters for the parent company and its subsidiary the Calco Chemical Co. Additional land adjoining the present plant on Wilkinson Blvd. has been acquired. Hugh Puckett is southern sales manager with headquarters at Charlotte, and A. J. Campbell of New York is general sales manager for the company. The expansion program will be completed by Feb. 15.

Howard Bros. Mfg. Co., Worcester, Mass., is erecting a 50x150 ft. one-story building at Gastonia, N. C., to be used as repair shop, supply depot and office. Contract has been awarded to Pennix Construction Co. Location is 219-223 South Linwood St. The new quarters, in charge of Carl Moore, will be ready about Jan. 15. The office operates under direction of Guy Melchor, southern manager, Atlanta, Ga.

Eshelman & Potter, Charlotte, N. C., have added David C. Miller, Hall Laboratories (Pittsburgh, Pa.) engineer, to their service staff to represent them in water-conditioning service work among southeastern industrial plants.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed L. G. Atkinson as manager of a new section of the circuit breaker sales department.

Shell Oil Co., New York, has placed Joseph H. Lee in charge of all lubricant sales east of the Rocky Mountains. Mr. Lee's appointment is part of a move combining Shell's eastern and mid-western marketing and producing units. Executive offices have been centralized in the R.C.A. Building, New York, with 12 division offices in Boston, Albany, Baltimore, New York City, Cleveland, Detroit, Chicago, Minneapolis, St. Louis, Indianapolis, Nashville and Atlanta.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed Robert N. Miers as eastern district engineer of the company's steam turbine division. For the last six years, Mr. Miers has been traveling out of Milwaukee on steam turbine sales and general engineering matters. His new headquarters will be at Boston.

Irving E. Biow Associates, Washington, D. C., designed to furnish national manufacturers and business men with sales representation in Washington, has been established by Irving E. Biow, formerly associated with the Washington office of Federal Housing Administration. The organization will function to facilitate business with the Government.

F. W. Warrington, manufacturers agent, Charlotte, N. C., has been appointed southern representative for Rodney Hunt Machine Co., Orange, Mass.

American Engineering Co., Philadelphia, Pa., has appointed E. W. Sharninghausen as treasurer of the company. He had served as purchasing agent since 1918. C. E. Harrison, vice-president of the American Engineering Co., has been appointed general manager. He will supervise all the activities of the company. He joined the organization in 1913.

The late CHURCHILL HUNGERFORD, chairman of Hungerford & Terry, Inc., whose death was recorded in these columns last month. The firm's business will continue as heretofore under the present officers headed by Churchill Hungerford, Jr., president.

SYMBOLS

One is of the American way of living . . . the other of the American way of business. *And* one cannot get along without the other.

The future of this country is dependent on business and business depends upon the fundamentals of unhampered enterprise. Sonoco Products form a small but important cog in a huge and vital industry built upon these American principles.

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FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Paint. U. S. Gutta Percha Paint Co. Booklet titled "The Right Paint for Your Plant" uses before-and-after pictures to show advantages of white paint, contains illustrations of a variety of plants using company's paints, and briefly describes the different types of paint it produces.

Wet Processing. Burkart-Schier Chemical Co. Handbook gives detailed information on use of Metasol in wet-processing operations such as scouring, bleaching, dyeing, and finishing; contains suggested procedures, formulas, and other practical data.

Dyeing. Calco Chemical Division, American Cyanamid Co. Technical bulletin No. 570 contains article describing the dyeing of fast colors on spun-rayon and mixture fabrics; gives routines for several dyeing methods.

Chemicals. Rohm and Haas Co. Booklet contains 34 pages of information on properties, uses, etc., of reducing and stripping agents; resins; enzymes; wetting, dispersing, and scouring agents; and other miscellaneous products.

Materials Handling. Elwell-Parker Electric Co. Handling of materials in industrial plants, from receipt of raw material to shipping of finished product, is the subject of a twelve-page booklet.

Building Maintenance. Flexrock Co. 68-page handbook describes methods of repairing, finishing, etc., of floors, roofs, and walls; included are numerous photographs showing results obtained.

Fire Extinguishers. C-O-Two Fire Equipment Co. Recent publication describes fire extinguishers operated by means of carbon dioxide in both hand and wheeled types.

Optical Equipment. Bausch & Lomb Optical Co. Uses of optical glass in national defense are outlined in this bulletin, which also tells the part played by Bausch & Lomb equipment in the World War.

Circuit Breakers. Westinghouse Electric & Mfg. Co. Medium-capacity breakers for indoor operation on 7,500 and 15,000 volts are described in Data Sheet 33-600.

Woolen Equipment. Davis & Furber Machine Co. Volume textile production resulting from national-defense orders, and the importance of modern manufacturing equipment, are discussed in the October issue of *Davis & Furbert News*.

Cloth Guider. Mount Hope Finishing Co. Circular describes recently introduced swing guider, highlighting its waterproof, rust-proof construction and purely mechanical action.

Packaging. Acme Steel Co. Use of metal bale tie bands in preparing fabrics for shipment is described in an illustrated booklet titled "Stopping Profit Leaks."

Conveyor Chains. Link-Belt Co. Tenter-dryer and carbonizing equipment manufactured by Riggs & Lombard Inc. and utilizing conveyor chains are described in an article in the October *Link-Belt News*.

Spraying Equipment. Spray Engineering Co. Air washers, cooling and humidifying systems, moistening equipment, and spray finishing equipment for various industrial purposes are described in Bulletin G-100.

Electric Tachometers. Esterline-Angus Co. Studying and supervising performance of textile machinery, recording handling of steam turbines during stoking periods, and making time studies on sewing machines are among uses of electric tachometers described in Bulletin 640.

Process Control. Foxboro Co. Illustrated mailing piece discusses benefits obtained by automatic control of processes in dyeing and finishing hosiery.

Shuttles. Draper Corp. Materials from which shuttles are made, and the various steps in their manufacture, are pictured and described in the October issue of *Cotton Chats*.

Sewing Machinery. Union Special Machine Co. Seaming on Nylon hosiery and a new thread ratio control for hosiery seamers are described in the October issue of *The Needle's Eye*.

Color Matching. Calco Chemical Division, American Cyanamid Co. Development of a triangular type of color chart and a review of factors influencing the judging of color effects are covered in 20-page technical bulletin No. 573.

Transmission Belts. Hewitt Rubber Corp. Leaflet gives data on various types of transmission belting, including horsepower per inch of width, arc of contact, belt speeds, prices, etc.

Liquid-Level Meters. Cochrane Corp. Eight-page bulletin, No. 2990, covers six styles of mechanical and electrical liquid-level meters for a wide range of services.

Unit Heaters. Ilg Electric Ventilating Co. Diagrams, photographs, and brief text are used in eight-page catalog No. 128-A, to describe features and advantages of unit-heating equipment.

Elevators. Warner Elevator Mfg. Co. Bulletin 580 gives information on freight elevators for a number of different uses; included are diagrams showing location of various parts and dimensions of elevators.

Roller Chain. Morse Chain Co. Bulletin R-40 contains information on construction of channel-lubricated, interchangeable roller chain; gives also data on applications, selection, and engineering features.

Electrical Control. Trumbull Electric Mfg. Co. September issue of *The Trumbullist* contains catalog information on switches, circuit breakers, dust-tight and rain-tight equipment, motor controls, connectors, panel boards, etc.

Roller Bearings. SKF Industries, Inc. Twenty pages of illustrations and descriptions of roller-bearing applications, and 16 pages of data on bearing selection comprise this recently released catalog.

Distribution Transformers. Allis-Chalmers Mfg. Co. Bulletin B6096 highlights in words and pictures six new features of recently introduced distribution transformer.

Thermoplastic Resins. E. I. du Pont de Nemours & Co. Technical bulletin gives information concerning grades and specific applications of polyvinyl acetates in various industries.

Electric Controls. General Electric Co. Photo-electric relays for counting, controlling, limiting, and sorting are described in Bulletin GEA-1775C; Bulletin GEA-3191 gives similar data on a-c. magnetic controls for wound-rotor motors used in a variety of services.

Microscope Accessories. Bausch & Lomb Optical Co. Twenty-eight page Catalog D-184 is devoted to descriptions and illustrations of microscope accessories for widening the usefulness of microscopic equipment.

pH Equipment. Cambridge Instrument Co., Inc. Folder 910E describes electron-ray pH meter sensitive to .005 pH; folder 910T covers thermionic pH recorders with which pH values can be continuously recorded with laboratory accuracy under plant operating conditions.

Pumps. International Nickel Co., Inc. Data on pumps and pump parts, with particular reference to corrosion problems is given in a 16-page folder. "Practical Pumping Problems and How They Are Solved."

Weaving Equipment. Crompton & Knowles Loom Works. Issue No. 12 of *C & K Photo News* pictures company's new southern warehouse, two textile training schools, Arlington Mill's 75th anniversary and C & K Fathers and Sons.

Mothproofing. Merck & Co. Inc. Four-page brochure compares the research underlying development of airplanes with that required by development of "Amuno" mothproofing compound.

Fluorescent Lighting. Westinghouse Electric & Mfg. Co. Manual titled "How to Design Fluorescent Lighting" gives data on correct mountings and structural details for maximum efficiency and benefits.

Heavy Cotton Loom. Draper Corp. November issue of *Cotton Chats* describes and pictures new XP Model loom developed for weaving many heavy cotton fabrics up to and including light duck.

Used Machinery. Consolidated Products Co., Inc. The part second-hand machinery may play in speeding up national-defense expansion is told in the Fall issue of *Consolidated News*, which also lists a variety of machines offered.

RESOURCES *for* RESEARCH

Improvements in the Forged Steel Ball Bearing result from expensive and painstaking research in laboratories, on proving grounds and in the field. No wonder New Departure has pioneered so many new departures in ball bearings! New Departure, Division of General Motors, Bristol, Connecticut.

NEW DEPARTURE
THE FORGED STEEL BEARING
Nothing Rolls Like a Ball

THIS IS NO. 24 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

GAINER BELT TENSION (No. 50 Winder)

When mills experiment with the tension on the Gainer Belts, they are usually trying to get a more uniform lay of yarn on the wound package. Sometimes they add old gears and junk iron to the standard 2¼-lb. Weight, and while this may result in some improvement, there is the danger that the increased strain on the belt will result in shorter belt life and in excessive wear on the spindle and cam shaft bearings.

FIG. 1

FIG. 2

Standard arrangement of Cord and Weight shown at left. Variation of standard arrangement is at right — illustrating use of longer Pin.

Mills also experiment with the arrangement of Gainer Frame Weight and Cord. In the standard arrangement (Fig. 1), the free end of the Cord is passed through the Staple (B) on the Gainer Case and around the Pin (A).

Among the variations of this arrangement, by means of which the mills hope to get uniform tension, are the following:

1. An extra wrap is taken around the Staple.
2. An extra wrap is taken around the Pin.
3. The end of the Cord is attached to the Staple, and the Cord is wrapped around the Pin (Fig. 2). A longer Pin is used.

Other mills prefer to replace the Weight and rawhide Cord with a spring connecting the Pin and Staple.

Meanwhile, the cause of the uneven winding may not be variation in belt tension at all. Among the possible causes are these:

1. Gainer Belts may not be all of the same width. The standard belt is one inch wide.
2. Gainer Belts may not be uniform in thickness. Any variation from the proper 1/16" thickness will vary the effective diameter of the pulleys.
3. The Gainer Belts may not be the same material. There is a difference in coefficient of friction between leather and fabric belts.
4. Gainer Belts may vary with changing humidity — particularly over weekends.

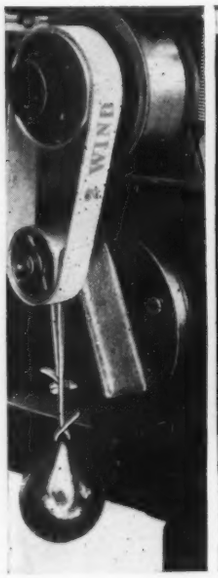

FIG. 3

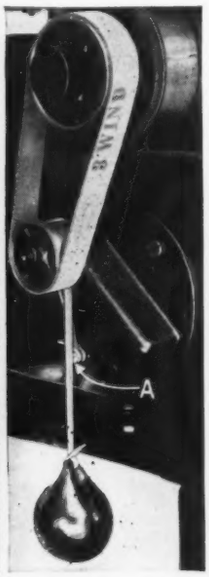

FIG. 4

Figure 3 shows a "2-wind" Gainer Belt with a "2-wind" Pulley, which is correct. Figure 4 shows a "3-wind" Belt on the same "2-wind" Pulley. This permits the Pulley to drop, and the increased tension will cause extra belt stretch, with ultimate danger of Gainer Case coming in contact with Pin (A).

5. Certain of the Gainer Belts may be oily. All belts should be kept clean.
6. Gainer Belts may not be uniform in length (Figs. 3 and 4). A longer belt allows the Gainer Pulley to drop down further, and the extra leverage from the center of the Gainer Case will add tension to the belt, but as the belt stretches, the Gainer Case may strike the Pin, which will cause an intermittent variation in tension.

NEW COIL SPRING FOR TRAVERSE FRAME DOG LEVER (No. 50 Winder)

Thorough tests of a new coil spring to replace the flat steel spring formerly used on the Traverse Frame Dog Lever, indicate a much longer life.

The new coil spring is attached by means of the same screw used for the flat spring. Since the new spring is located near the top of the Lever, it permits a much better adjustment of the tension on the Dog.

FIG. 5

Traverse Frame Dog Lever Spring — Part 50-466-6

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THE OVERSEERS' CORNER

SUPERSTITIONS AND SHUTDOWNS

A PETE & BILL DISCUSSION

"What ails you this morning, Bill?" asked Pete as he paused at the door in passing.

"Just, worry, worry, worry" answered Bill slowly, wheeling his chair around so that he could stare out of the window. "Say, Pete" he resumed after a moody silence, "do you believe in signs?"

"Uh-uh, stop and go signs."

"I mean, like breaking a mirror. Do you reckon that could bring you bad luck?"

"Shucks, no!" said Pete disgustedly. "Get that sort o' stuff out o' your mind. What's a mirror got to do with it?"

"That's just what worries me," replied Bill seriously. "Yesterday I knocked over my shaving mirror and busted it, and you know the trouble I had all day long. Nothing went right. And to cap it all the boss came in here just now and gave me a raking over about those machines going off production—I didn't know they even had to be overhauled."

"Now you've come to the real point, Bill" Pete came back, "It wasn't the mirror, it was your not knowing those machines were getting in such bad

Pete paused at the door in passing . . .

shape. Why don't you see that your fixers watch for weak spots that *might* develop, instead of just being content with fixing parts already broken? My men frequently take out parts that are *worn*, before they break. I keep after them about this all the time."

"It just runs up your repair costs," argued Bill.

"Yes, but it saves shutdowns, and it increases production, and it avoids alibis" stated Pete emphatically.

Bill was still staring out of the window, as Pete went his way, chuckling.

How far should a department go in maintenance?

Letters From Readers

Give Second-Hand a Chance

"The Old Army Game"
Pete & Bill, Oct., 1940

Editor, Overseers' Corner:

I must say that I appreciate Pete's broad-minded attitude towards his second-hand who has been pulling the army game on him. It does not take a good overseer to fire a man, but on the other hand it takes a real overseer to correct the faults of an employee who otherwise would be a good man. Pete says his second-hand is a good man fundamentally. This being true, I believe Pete is a big enough man to show him his faults in a way that he will see and appreciate and be a better man than Pete can go out and hire. If he can do this he will not only be helping himself and his firm, but will save his second-hand and family the discomfort and embarrassment of being out of employment. I would do like Pete; I would give him another chance no matter what Bill says.

L. A. ELMORE, *assistant superintendent Rhodiss Mills Co. (Rhodiss, N. C.)*

Efficiency

Editor, Overseers' Corner:

"Efficiency" is a much abused word. In the writer's opinion it should mean: doing the most work with the least amount of effort. There used to be a word for it that was commonly used. "*Speed.*" "Speed" does not mean "hurry." Take notice of a weaver who gets the most production in the mill. He never seems to be in a hurry and yet his looms seem always to be running. Sometimes the other weavers think that this is because his looms are better or that he gets all the best warps. But if he is switched to another set of looms, in a day or two he is getting the same results as before.

The same thing is true of loomfixers, foremen, and superintendents. One fixer is always in a sweat from running up and down the aisle doing nothing, and his section is always in an uproar; while another fixer with the same type

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

A GROUP OF KEY MEN snapped at Anniston (Ala.) Mfg. Co., by TEXTILE WORLD'S roving reporter. Left to right—W. E. Ervin, supt., L. E. Watson, office, A. T. Coleman, office, J. W. Cox, overseer of carding and spinning, T. M. Daniel, overseer of weaving, S. T. Daniel, overseer of cloth room, U. G. Craft, supplies, M. W. Gilmer, master mechanic.

of looms and work seems to be just strolling through his section, checking here and there, correcting this and that, never in a hurry, and always caught up in his work.

The difference between the words "speed" and "hurry" can be likened to the difference between the tin Lizzy and a modern V8. The tin Lizzy travelled as many miles as the modern car, but, the mileage was mostly perpendicular.

Instead of the hurrying type of worker criticizing the speedy worker it would pay him to observe closely the latter's methods and copy them.

This applies equally to all classes of workers from the management down to the sweepers and oilers. If the management is always pulling its hair out, the personnel will be doing the same. —C. S. B. *(Pa.)*

Don't Frighten People

"Photographing Gruesome Accidents"
Pete & Bill, Sept., 1940

Editor, Overseers' Corner:

Although Pete has a very practical argument about posting the photographs of gruesome accidents, I feel compelled to side with Bill in this discussion. There is so much tragedy abroad in the land and so many sordid things come to our attention, by gruesome pictures in our place of business I doubt very much if they will accomplish what Pete thinks they will. Safety should of course be stressed in every manufacturing plant, but let everything be done "in decency and in order." Frightening people into being careful is somewhat like terrorizing them into being good. It just can't be done!

K. M. SMITH *(Vinton, Va.)*

Overseers' Practical Helps

Simple Plate Drill Jig

It is usually important that drilled holes be at right angles to the surface of the material and it is difficult, with a hand or electric drill, to make them so. An inexpensive and accurate aid in drilling perpendicular holes is a plate jig made from ½ inch bar steel.

Near one end of a 2x6 in. piece of bar steel, drill a small hole perpendicular to the face of the bar. With larger drills, enlarge the hole to desired size. The use of a small lead hole not only makes the drilling easier but prevents the finished hole from being oversize. Different sized holes can be cut in the two ends of the plate, and it is good practice to stamp the size near each one. A soft cold rolled plate lasts for quite a number of holes, but the ends of the plate can be hardened or the holes bushed at no great expense.

To use the jig, first lay out the hole and spot drill to the depth of the drill point. Put the plate on the drill, then hold the drill firmly while the plate is clamped in position with a C clamp or hand screw. Place the clamp screw at the back so it will not interfere with the drill chuck.

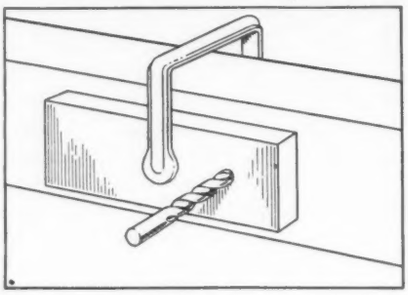


Plate drill jig clamped to stock

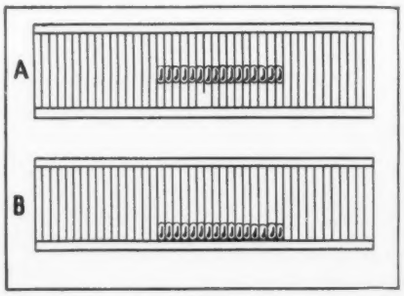
Walter A. Simond *(N.H.)*

Repairing Broken Dents

Broken dents in loom reeds can be repaired without removing reeds from looms. By inserting small coil springs of proper pitch and gage to fit the reed, the broken dent is held. Spring should extend ½ in. each side of broken wire and be placed about halfway between the ribs, as shown at *A*.

After the spring has been inserted, two pieces of half-round steel are inserted, one on each side between the spring loops and the reed wire. These strips of steel hold the spring in the reed. After inserting the strips, push the spring to the top or the bottom of the reed, depending on where the dent is broken, as shown at *B*.

When broken dents refuse to go into their normal position, cut off about ⅛ in. of the wire. This will allow the dent to straighten itself out.



A—Initial position of spring in reed; *B*—Spring in final position

P. C. Wayner *(Mass.)*

Finding Tom, Dick, or Harry

"Hey Charlie, have you seen Tom?"

"Last time I saw him he was headed for the warehouse."

"Then where's Dick?"

"Search me. Half an hour ago he was in the spinning room."

"How about Harry?"

"I dunno."

And so machinery stands idle or the water supply is cut off while a search is made for a mechanic, electrician, or plumber.

Not so if the boss will expend a little forethought and a few cents of somebody's money. Place an inexpensive blackboard on the wall near the shop door and have each man, as he goes out, chalk up his name and destination. When someone is needed PDQ, he can be found at once.

J. C. Norman *(Ala.)*

Quality Woolen-Card Operation

Calls for care by operatives during both running and stripping periods

By P. P. TOWNSEND

CARD TENDERS have a direct influence on the life of the machine and the quality of product. Hence, the type of operatives employed for this work should be given close attention. The work of tending the machines depends on their layout and on the custom of the mill. Where the machines are parallel to each other, and arranged with all the hoppers at one end of the building and the condensers at the other, it is possible to arrange for one operative to see to the replenishing of all the hoppers, and have the condenser ends looked after by other workers. Sometimes it is found that tenders prefer to have sole charge of a pair of machines rather than share the control, even though it means more work. This is the natural desire to call the machines their own, and it may be for the good of the department to foster the feeling of responsibility. Pride in the machines also leads to cleanliness in a carding room.

Operatives should be encouraged to refill their hoppers before the stock gets down too low, but the reason must be pointed out; i.e., that there is a chance of a missed weigh if there is not sufficient material in the hopper. At the same time, one must not convey the idea of cramming material in until the sheet has stopped running. The necessity of mixing in waste regularly must also be emphasized so that light weighs and poor yarn are avoided.

The size of condenser bobbins is important. The more nearly they are the same size, the better it is in the spinning, both from the point of view of running-off and in the running-out of a set. Much trouble at the condenser end is caused by the fact that some wooden spools do not run easily on the surface drums, and after starting the spool the operative, finds it will not run and has to replace it with another. One cause might be that the supports do not allow the metal flanges at the end of the spool to rotate, by reason of their being too near together. More often it is due to the flanges becoming loose as a result of being thrown on the floor or stacked on end.

A third cause might be due to the two supports which carry the spools not being parallel with the surface drum. This is brought about by the supports having been pressed on at some time or other. The result might be that the spool will not run, since the metal flange is thrown over to one side and bears on the side of the surface drum, or that one side of the condensed bobbin is tighter than the other, which causes trouble during spinning. The cure is to get a rod long enough to rest on both supports, set them parallel with the bobbin drum, and then either countersink a hole in the bar which carries the supports at the point where the bolts hold them, or, if it is felt that the supports may need altering slightly in the future, a flat place filed on the bar will achieve the same object.

While a machine is being stripped, operatives should wipe fly off the machine on to the floor and sweep up all light fly from the floor. The material which has gathered under the machine since the last stripping should be pulled out and swept up. These two lots are usually kept separate, since the first is usable and can be re-fed into the hopper, while the second may need carbonizing.

The next operation is to go around the machine and remove, clean, and oil the compound wheels which form the doffer drive, and oil the loose pulleys on the chain and stripper drives. Finally, the stripping waste, which by this time is on the floor, should be swept up and put into a third container. During stripping all roller necks should be cleaned out and, as this process will tend to remove oil from the bearings, it is advisable to oil these before the machine is started up again.

Much loss of running time can be caused through breakage of belts, especially stripper belts. There is always the possibility of this happening, and the result may be disastrous through the belt getting in between the cylinder and the various rolls, causing damage to the card clothing. In order to decrease this danger, it is a good

Abstracted from *Textile Manufacturer.*

WORLD'S SMALLEST POWER LOOM?—Probably the smallest power loom in the world has been built out of odds and ends by J. T. Cox, Greenville, S. C., loom fixer, now employed at Kendall Co., Pelzer, S. C. His loom shown herewith, is powered by a 1/8-hp. motor from a peanut roaster. The crank shaft has a 3/4-in. throw. The loom is ball bearing throughout, the bearings being taken from discarded automobile generators. It runs 172 picks per minute. The pick levers were made from connecting rods out of a T-Model Ford engine and the head gears are automobile timing gears. The little loom is 17 3/8 in. between frames and has a unique center picking motion. It carries a shuttle 5 1/2 x 3/4 in., using a 10-penny nail for a bobbin. One feature claimed by the inventor for his loom is that it will not slam off when starting with the crank shaft up to the top center. In the picture, Mr. Cox is demonstrating the loom to an interested neighbor, Robert Williams. He plans to exhibit his miniature loom in the schools of South Carolina as part of a textile educational program he hopes to develop.

plan to allocate to one person the duty of inspecting every belt on each machine as it is being stripped. During this inspection any joining which shows signs of giving way should be repaired, and any belt which is slack should be tightened, either by taking up the belt, or by the adjustable pulley when such is provided. The stripper belt must be tight or the fancy roller will slip, and loss of speed here means loss of clearing power, resulting in extra stripping. This slippage may also be caused through the belt being coated with fly. Belts should be cleaned previous to stripping, as the machine is running-off. Where sheet cards are used for the card clothing, it is customary to cut the old cards up and use them for this purpose. The practice of holding stripping boards on belts is likely to be detrimental to belt life.

Keep the Looms Running

Practical pointers on overhauling and cleaning which will reduce idle time

BY ARTHUR C. WAYMAN

IDLE LOOMS COST mills real money. Most frequent causes for idleness are warp out; waiting for spare hand or spare hand working on loom; and breakdowns and waiting for loomfixer. However, many potential delays can be eliminated by thorough overhauling of looms when warps are out. During this period five important steps should be taken. These are: removal of old harness beam, cleaning of loom, oiling and greasing, overhauling of loom, and mounting of new warp.

When removing old harness, care should be taken to make sure all ends are properly leased. If there are any damaged heddles, or a questionable reed, notations of such should be made on an accompanying ticket so the twisting-in department can make the necessary repairs. This will prevent remounting of the defective equipment, with subsequent loom delays and production of imperfect cloth.

Warp beams should also receive proper care. Flanges are frequently thrown out of line. Gudgeons are sometimes bent; this will prevent the beam from running true. Perfectly built-up warps, which can only be made with true-running flanges and true-revolving beams, are of utmost importance to production of acceptable fabrics.

A good cleaning job is likewise important. Dirty looms will not turn out clean goods. Weavers must be able to touch such parts as handwheel, head-motion wheel, starting and brake handles, pick wheel, and reed cap without getting soiled hands. Dirty ends caused by soiled hands are sometimes more the fault of the system of cleaning than of carelessness of weavers. If necessary, boxes should be removed and cleaned separately. Shuttles should also be polished, as soiled shuttles dirty shuttle-fillers' hands; and thus represent another reason for soiled filling.

After a loom has been cleaned, the floor surrounding it should be scrubbed. Often there is a heavy accumulation of oil and grease under the loom. Oilers should be taught that it requires only a drop of lubricant at the right place, to reduce friction, and that oil which misses the hole is completely wasted.

No time is more suitable for a thorough loom overhauling than when a warp is out. Loomfixers should bear in mind that a good job of overhauling at that time means an easy job after a new warp is started. It can hardly be expected that no troubles will develop during the running of a warp, but their frequency will be greatly reduced. This will result not only in increased loom efficiency, but also in higher quality production. Parts most likely to give trouble are loose bolts and nuts, dobby or head motion, filling motion, protection, take-up, feeler, and timing of pick. Any parts showing excessive wear should be replaced. Harness-cords may be badly worn; in such cases it will pay to check sheaves and make sure they work freely. Rawhide pickers may have become dry and brittle, due to heat generated during weaving. If this is the case, they should be replaced regardless of condition. Pickers still in good physical condition can be soaked in oil and used again.

Lay coverings should be replaced without hesitation when they show the slightest wear. What may at first appear as money wasted by discarding certain supplies before they actually fall apart, will prove to be a good investment due to greater loom efficiency and cleaner cloth. One piece of seconds is much more expensive than a piece of corduroy used as lay covering, a couple of new pickers, picker sticks, or harness cords.

Thread cutters on shuttle-changing automatic looms should also receive careful attention. Incorrect performance by these parts often causes dragged-in filling and shiny picks.

Shuttles should be given close scrutiny. Spindles should be checked for excessive play and misalignment. A drop of oil will do wonders. The fur should be examined to make sure it is in good condition. Tension rings and pins should be checked for cuts, and each shuttle should be carefully polished. Uniformity of filling-drag in all shuttles should be checked. Another possibility is in gaging for uniform size; this is particularly important when shuttle-changing looms are in use. This shuttle work can be done at the same time the fixer overhauls the loom.

WARP HANGING should be done on a systematic basis. The men should be trained to line up drop wires and whip-rolls, as well as warp tension, according to the quality being woven. Some mills give such necessary information on the warp tickets; in this way, misunderstandings are less likely to occur. It is more economical to use two men for warp hanging. While one is busy with warp tension and underneath work, the other can lace up the warp, hang harnesses, and pack the reed. Two-man teams when properly trained, will give excellent results in this task, which unfortunately is frequently not taken seriously enough. Some mills might find surprising results if they would give more thought to selection of workers in this category.

After the new warp is ready for starting, the loomfixer should again take charge of the loom. It is his duty to check the harness chain and pick wheel, if these were installed by warp hangers or anyone other than himself; and to weave a heading, during the production of which minor adjustments can be made.

The loom is then ready for a final examination, either by an inspector or foreman. Weave, picks per inch, tensions (both warp and shuttle) and the loom in general are checked. Improper arrangements should be promptly brought to the attention of the individual concerned. In this final follow-up, a signed check list is of great value. Such a list shows the names of loom cleaner, oiler, warp hangers, fixers, and inspectors, and makes it possible definitely to know who works on each loom.

It will be noted no mention has been made of the smash-hands employed in some mills. It is felt this job can be absorbed between warp hangers and inspectors. Especially should this be true in mills in which looms are overhauled thoroughly and regularly as suggested in this article. In such mills smashes will probably be very rare occurrences.

Alabama Operating Executives

Discuss carding and spinning problems at first meeting of new association

MEMBERS of the Alabama Textile Operating Executives held their first discussion meeting Nov. 9, in Duncan Hall, Auburn, Ala., with 250 superintendents, overseers, and other executives attending. The technical session was devoted to a discussion of carding and spinning problems. John C. Baum, vice-chairman of the new organization, conducted the discussion of carding; and Nelson Harte, superintendent, Merrimack Mfg. Co., Huntsville, Ala., that on spinning.

First of the questions to be proposed was in reference to the advantages of the oil spray and where it could be best introduced. Several members agreed that use of the oil spray keeps down dust and fly, and possesses distinct advantages if not used to excess. Too much oil results in clogged screens. It was generally agreed that the best point of application is behind the second beater in the pickers.

Fred Phillips, Buck Creek Cotton Mills, Siluria, Ala., gave a clear, concise statement of his experience in use of compressed card sliver. While his mill has a limited number of cards equipped, he has found the system more than satisfactory, and easy to install. Running 14½-oz. laps, the running time of 45 min. from empty to full cans on old system was increased to 70 min. using the compressed sliver. The old cans weighed 10 lb. 12 oz. full; the new cans 16 lb. Careful tests indicated that very little if any trouble developed later in drawing out the sliver. At Opp (Ala.) Cotton Mill, 76 cards are equipped and working satisfactorily. There is a slight increase of power required for cards. No change in breaking strength has been noticed. Metallic top and bottom rolls are used in drawing.

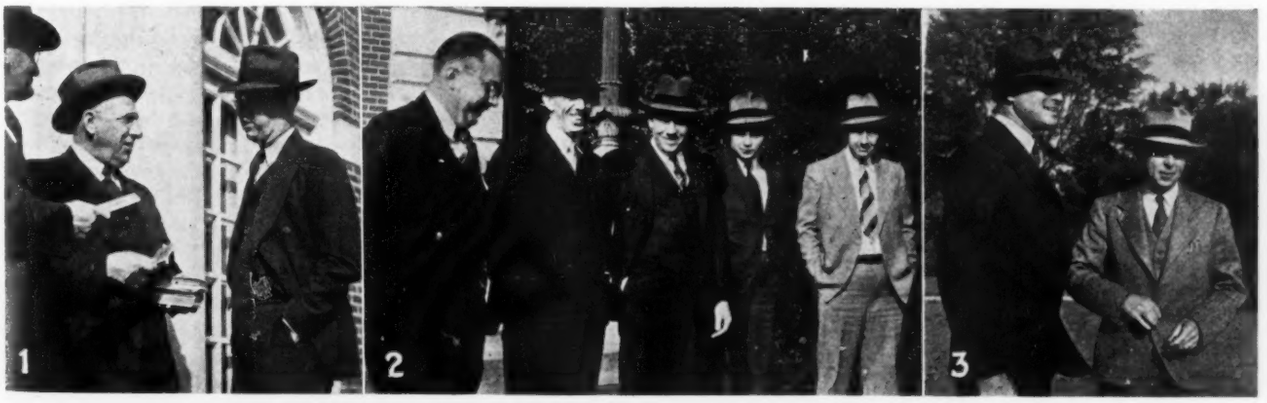
The question "What is the best card setting to eliminate specks or neps using 15/16-in. middling compressed cotton, 14½-oz. laps 55 grain card sliver and carding 9 lb. per hr.?" elicited a lively discussion and much good-humored raillery. R. W. Jennings offered a $10 prize for correct solution. Several suggestions were made, including frequent stripping, careful blending, sufficient time to allow the opened bales to "bloom" out before feeding, as close setting as possible of cylinder to doffer, and a 45° angle for mote knives. There was some difference of opinion as to best relative humidity and temperature to be maintained for most efficient work on super-draft slubbers, but it was agreed that from 55 to 60% r. h. and a temperature of between 75 and 80°F. would be satisfactory.

No agreement was reached on the question: "What percentage variation should be considered normal in roving made from middling ⅝ to $\frac{15}{16}$ in. cotton?" Members reported variations of from 3% to 8% on various numbers. There was considerable difference of opinion also on the necessity of increasing the twist per inch for two hank long-draft over the regular two process draft in the drawing. Several members stated that an increase of from 3 to 5%, 5 to 8%, and—in one case—2%, was required, while another prominent manufacturer had found it advisable to reduce the twist slightly.

The first question proposed by Mr. Harte was: "What is the best method to use in piecing up roving on long draft spinning to eliminate slugs or lumps in the yarn?" The consensus was that the ends should be rolled both ways. Operatives should be carefully coached to see that this is done. Several mills are experimenting with the use of synthetic apron on long-draft spinning frames and have found them generally satisfactory. At one mill, with 2,000 spindles equipped it was found that synthetic aprons permitted $\frac{1}{16}$-in. closer roll setting. Rolls and carrier blankets should be cleaned thoroughly once a year. In many mills, this is done as often as once every four months.

Opinion was divided on the question of cleaner-hands. Ten mills reported the use of special hands to clean the frames, 20 others reported that the spinners were required to do this work. One manufacturer is trying both methods by using special hands in one mill of 16,000 spindles and having the spinners clean their own frames in another mill of 20,000 spindles. No conclusion has been reached as to ultimate economy. Where cleaner-hands are used, it was suggested that economy would result in using only experienced help. Green hands are expensive. A good cleaner must first know how to spin.

USE OF PAPER TUBES was endorsed by several mills where the system is being used, or where experiments are being conducted. A better balanced package, increased spindle speed, good running work, and low cost were some of the advantages mentioned. The best method of marking yarns to keep numbers separate was discussed at length. Painting the ends of the bobbins, or the sleeves for the cheeses on the Barber-Colman machine, with a carefully worked-out color scheme seemed to be



1—F. D. Jacoway carries on. New York & New Jersey Lubricant Co. has been distributing pencils and note books at similar meetings for twenty years. Shown here are J. H. Hampton, F. D. Jacoway and T. H. Floyd. 2—S. B. Kitching, Robert Rostron, B. L. Monbrief, J. A. Ward, A. F. Richardson, all of Alabama Mills, Inc. 3—A. H. Randall, general superintendent, Alabama Mills, Inc., Birmingham, Ala., K. D. Forsyth, superintendent of the company's Aliceville, Ala., plant.

the most popular system. One mill used re-run tangled yarn for selvage construction only.

The final subject for discussion was: "Describe your method of marking and storing filling." Suggestions offered had to do with chalk markings, painted bobbin ends, boxes, bags, etc., each mill working out its own problem to meet local conditions. The discussion was closed with a remark that seemed to strike the popular fancy when one member suggested that the problem now was not how to store but how to get enough to store.

Officers of the association are Frank K. Petrea, Talledega, Ala., general chairman; John P. Baum, Opelika, Ala., vice-chairman; B. H. Crawford, Auburn, Ala., secretary-treasurer.

Wool Overseers' Annual

Fred Graichen is new president; W. D. Fales, of R. I. School, speaks

THE ANNUAL MEETING of the National Association of Woolen & Worsted Overseers brought an attendance of over 170 to the Hotel Manger, Boston, Mass., Nov. 9. Voting for the only contested office, third vice-president, resulted in the election of Joseph D. Scanlon, of Holyoke, Mass. It is the custom for the officers to move up one peg each year and as a result there was unanimous election of the following: President, Fred Graichen, Fulton, N. Y.; 1st vice-president, John J. Lyons, Providence, R. I.; 2nd vice-president, Ed Wolfendale, Lawrence, Mass.; treasurer, Clarence L. Cutler, Stottville, N. Y.; secretary, James J. Burns, Holyoke, Mass.; secretary of the beneficiary department, Bernard J. O'Reilly, Collinsville, Mass.

Various annual committee reports indicated a successful year for the association. Thirty-one new members were voted to admission in the association and the names of 20 more candidates were placed on file for investigation and voting on at next meeting.

George W. Swallow, Utica, N. Y., president of the association for the year just closing, introduced the incoming officers. Newly-elected President Graichen, on accepting the gavel, said: "This is the largest textile organization of its kind in the world, and it is with gratitude and pleasure that I accept your trust. These meetings are for the purpose of education and social enjoyment. With foreign affairs in such a chaotic state, the whole economic system of the world is in an upheaval—how great is our need for a closely knit organization! I should like to see our meetings something more than merely social affairs. I should like to see us give them a more serious and thoughtful side."

President Graichen introduced Wm. D. Fales, head of the Rhode Island School of Design who spoke on the value of technical training and of the fine work that the various group organizations are doing for able young men (who have not the money to attend school) through scholarships. There are today more jobs available for trained young men, he said, than there are young men available. "The sum total of knowledge," said Mr. Fales, "is so great that it cannot all be acquired in the mill. The time is too short. That's the reason why the textile schools are of value in filling in the need." He urged that the National Association of Woolen & Worsted Overseers consider setting up a scholarship.

The past president's badge was presented to retiring-president Swallow by the dean of the association, Robert J. Harrington.

Wage-Hour Law Analyzed

At Charlotte STA meeting

PROVISIONS OF THE WAGE-HOUR law, with particular emphasis on the learner problem and wage rates for overtime, were discussed at the fall meeting of the Piedmont Division of the Southern Textile Association, held at Charlotte, N. C. B. M. Bowen, superintendent of Salisbury (N. C.) Cotton Mill, chairman, presided. The group was addressed by Stephen R. MacRae, of Columbia, S. C., assistant to Maj. A. L. Fletcher, regional administrator of the Wage and Hour Division of the U. S. Department of Labor. A summary of his remarks follows:

Where the wage-hour law is willfully violated with criminal intent by a department head without the knowledge of the company head—who previously has instructed the department head to comply with the law—the indictment is brought against the department head and not against the company head. This means that the superintendent or overseer has got to know as much about the law as the top executive to stay out of trouble.

In recent weeks a new ruling has been made relating to "administrative employees" earning at least $200 a month, exempting them from the hours clause of the law. Office managers, accountants, etc., earning $200 a month are classed as administrative employees.

(Continued on page 104)

SOME OF THE OLD-TIMERS at the Dwight Mfg. Co's. plant at Alabama City, Ala. From left to right: J. M. Hale, with the company since 1896; D. G. Sosebee, since 1906; B. L. Turner, since 1900; Riley Brown, since 1898; W. E. Entrekin, since 1899. The five men represent 203 years of service!

QUESTIONS & ANSWERS

Labeling under New Wool Act

Technical Editor:

As we understand it, the new Wool Labeling Act will not go into effect until nine months after its passage. However, some of our customers are asking us to give them various percentages, under that act, of yarns we are now making, and have made in the past, which probably will not be disposed of until the 1941 selling season.

Can you give us just what materials must be labeled under this act, and must there be given the percentage of each of such materials? (C.A.C.)

All "wool products" must be labelled and the definition of that phrase is "any product or any portion of a product which contains, purports to contain, or is in any way represented as containing wool, reprocessed wool, or reused wool." The last paragraph of the law definitely excepts from all provisions of the law carpets, rugs, mats or upholsteries.

We will quote verbatim the information which the stamp, tag, label or other means of identification, or substitute therefor, must show: "The percentage of the total fiber weight of the wool product, exclusive of ornamentation not exceeding 5% of said total fiber weight, of (1) wool; (2) reprocessed wool; (3) reused wool; (4) each fiber other than wool if said percentage by weight of such fiber is 5% or more; and (5) the aggregate of all other fibers." It must also disclose maximum percentage of any non-fibrous loading or adulterating matter.

The term "wool" means fiber from the fleece of the sheep or lamb or hair of the angora or cashmere goat (and may include the hair of the camel, alpaca, llama and vicuna) which has never been reclaimed from any woven or felted wool product. The term "reprocessed wool" means wool fiber recovered from woven or felted state which materials, however, have never been utilized in any way by the ultimate consumer. The term "reused wool" means wool fiber recovered from a material spun, woven, knitted or felted which has been used in any way by the ultimate consumer.

Shiny Lines in Silk Crepe

Technical Editor:

We inclose a sample of silk flat crepe faille which has irregular shiny lines on half the face of the cloth, throughout the entire piece. We would appreciate it if you would tell us the cause of this imperfection. (8758)

It is our opinion that this is a faulty loom condition. There are numerous things which will cause defects of this type. Some are: shafts or harnesses not properly adjusted as to lift, being too high or too low in the raceplate; shuttle not picking properly, but being too early or too late; shuttle not running straight or true; filling binding or being rubbed at the shuttle box.

We believe that the last mentioned cause is really the fault of the shiny lines that appear in this sample. This condition can be detected by closely observing the loom, from the side, while it is in motion.

Ribbon Curls

Technical Editor:

Inclosed is a swatch of narrow fabric; you will note how this curls. We hang the same amount of weight per end on ground and edge; also we have had the edge hang lighter than the ground. We have used different sizes of shuttle springs, both heavy and fine. The warps are made of 150 den. sized rayon. Filling is 40/2 cotton 9 turns per inch. What in your opinion causes this curling? (8760)

The sample of ribbon as received was in a wrinkled condition, and it appeared necessary to remove the wrinkles before making an examination of the fabric. Accordingly, a fairly warm flat-iron was run over the ribbon, which was then hung in the air and allowed to remain overnight. As it showed no sign of curling the next morning, it was not disturbed for several days, during which it did not curl. It appears quite possible, therefore, that a warm pressing will eliminate the tendency. If it does not, a change from the present two-ply cotton filling to a single filling of comparable size should solve the problem.

Cockling of Tropical Worsteds

Technical Editor:

Would you be kind enough to let us know what the term "creping" means as used with respect to tropical worsteds, and give us whatever suggestions you may have to offer in regard to overcoming this difficulty. Any information you may give us in this matter will be appreciated. (8742)

It is our understanding that the word "creping" in respect to tropical worsteds relates to trouble which is usually in the form of cockles or, if in the individual yarns, where there is too much twist in the yarn, thus giving a creping effect. In most cases, crabbing overcomes this difficulty. If crabbing is insufficient, either a little more care in the steaming of the yarn, or reduction in the amount of twist, will eliminate this problem. The actual word creping is not common and the difficulty is usually referred to as cockles.

Carding Short Staple Fiber

Technical Editor:

In running 100%, 1-1/16 in. 4½ den. viscose staple, what card settings give best results? Trouble has been had with the web being uneven and at times too heavy to run as it should. (8751)

With 4½ denier stock cut to 1 1/16 in., which is short, more or less trouble should be expected because it is hard to make a good lap from this material. Normal card settings, a little on the open side, should do a good job. A tin pan supporting the web under the doffer comb might help in keeping the web together. Also, this coarse fiber runs better on low-count card clothing, about 100s or 110s. Another cause of spotty web is plucking at the feed roll. Weight of lap must be sufficient to prevent the lickerin from pulling it out in bunches.

Finishing Knitted Overcoating

Technical Editor:

I am inclosing a piece of knitted overcoating fabric and shall appreciate it if you will advise how this should be finished. Will you kindly elaborate particularly on the processes after fulling? (8746)

To obtain the best results after fulling, this type of knitted fabric, must be fulled correctly. A typical fulling solution consists of 12 oz. of palm oil soap and 1 oz. of alkali to each gallon of water. The soap and soda is boiled at least 4 hr. This type of coating will lose about 23% dead loss. If fulled down to 54-55 in. in width and trapped with two or three weights to bring up the cotton back as much as possible, a good solid fabric that will stand the necessary napping will result.

After fulling enter the goods in the cloth washer, sew ends together, run around once to eliminate possible tangles. Close gates, add enough water (cold or luke warm) to about half cover the goods, and start up. This will loosen up the fulling soap, after a few minutes it will appear as a dirty mess. Run 10 min., open gates, and allow solution to run off; use no water at this time. When the bulk of the solution has run off, close gates, and add enough fresh

soap to work up a full creamy lather. As 75% of the dirt and oil in the goods have been eliminated by dumping the first soap, the new soap will thoroughly clean up the balance, imparting a soft lustrous handle to the fabric, and leaving nothing in the goods to annoy the dyer. Run 30 min. and rinse off in cold or luke warm water for 1 hr. Extract and split if goods have been stock dyed.

If fabric is to be piece dyed, the pieces are not split until they return from the dyehouse. Give four to eight runs on napper while still wet, with medium energy, according to fullness of nap desired. Crop on a single shearing machine, with a slowed-down wire raising brush, and speed of cloth not over 15 yd. per min. Do not bite off too much nap on the first run, raise carriage so blade is about 3/8 in. above rest, come down six notches next run, and four more on last run. This will square up the nap very nicely. Give two more runs on napper, same energy.

A slow revolving brush in front of the dryer, just before the cloth passes over the top bar, lays the nap and straightens out any roughed-up places.

After drying, the pieces are ready for the final shearing; a faster shear can be used, and enough runs should be given at the final setting to give a clean-cut, smart appearance. A few extra runs at the final setting works wonders in the attractiveness.

Chafing Along Selvages

Technical Editor:

Inclosed is a swatch of dyed 110x48 Panne Satin, 150 den. warp and filling. This cloth is woven at 169 picks per min.; sand rolls are covered with an 80 grit, 45 flexing material; press rolls are covered with Rosella felt. Every once in a while we get complaints about chafing as in this sample. However, we do not seem to find this defect in the gray cloth. Will you please examine the sample and advise me whether you think the chafing occurs in the weave room or at the finishing plant, and suggest remedies. (8748)

The defective portions of this sample indicate that the warp yarn has been bruised in weaving, as a few of the broken or cut filaments are locked in with the filling yarn. This could result from several things. Most likely is that shuttles were striking the bottom shed as they passed over the raceplate. Trace the piece back to the loom on which it was woven, and see whether the shuttle is being driven from the box correctly. It may be possible the shuttle has too much freedom in the box and is given a choppy movement when it comes out.

See that temples are working correctly; this defect is just the right distance in from the selvage to show a possibility that the temple may be at fault. There may be a possibility that your weaving foreman and loomfixers do not correctly understand adjustment of temples on this weave. The satin does not require as much temple-pressure as taffetas and other weaves. Smoother and more worn temple rollers can be used on this than on most weaves. Here is a suggestion: If two-roller temples are used, grind away the high ridged edges along the ends so they slope from flatness to the regular surface about 2 in. in from the ends. When the cap with the two rollers in place is in proper position, the cloth lies nearly flat under the rollers. Ordinarily, as the cloth is pulled out by the action of the rollers, there is a great deal of strain created at the temples, where the cloth goes up and down over the ridged edges beneath the rollers. This strain may break filaments, and when the fabric is being dyed and finished the filaments open up and give a chafed appearance, warpwise of the fabric, where the temple rolls have been. The flattened surface prevents this strain. Other precautions to be taken: Be sure the raceplate is covered with a good grade of corduroy; make certain shuttles are polished and smooth.

Abrasion of Filling

Technical Editor:

Inclosed is a sample of a combination acetate and viscose fabric, in which you will note light colored sections of filling yarn in the center of the sample. We would be very thankful if you would give us your opinion as to the cause of this imperfection. Almost without exception it has appeared in the center of the pieces, as in the inclosed sample. (8757)

This imperfection is caused by abrasion of filling, through contact of yarn at or in the shuttle box. This cloth is evidently woven on a loom much wider than the fabric, and some means employed to control the long length of filling from shuttle box to selvage. Either this is the cause of abrasion or the filling is contacted between shuttle and some other object.

We advise taking out a few picks where the imperfection shows. The abraded filling can easily be seen, and as the imperfection always appears in about the same place in the cloth, this is evidence of contact of filling and shuttle at some particular spot in or near the shuttle box.

It should be an easy matter to locate the point of abrasion. Stretch the finished cloth out to normal width of yarn in reed. Then measure the distance from the selvage to the point where the white marks show in the finished piece. Knowledge of this distance should make it easy accurately to locate the point of filling contact with whatever is causing the abrasion.

Soaking Silk for Warp

Technical Editor:

Will you please give us the best formulas for soaking Italian, Japan, and China silks for warp stock. Deniers are 20/22 and 24/26. (8752)

Two general types of silk soaking compound are in common use. The first is usually made in the mills and is an emulsion of neatsfoot oil or olive oil and soap. The second is the so-called soluble soaking oil. Many of the companies supplying textile chemicals also manufacture soluble soaking oils. A typical soaking oil contains sulphonated animal and vegetable oils to which has been added white mineral oil and a wetting agent. Some do not contain mineral oil, and some have added a mildew preventive.

For soaking warps, 60 gal. of water is ordinarily recommended for 100 lb. of silk. For Italian silks, 4 to 5% of a soluble oil, based on weight of yarn, is usually employed. For Japan silks 4% oil is generally sufficient; for China silks 5 to 6% oil gives best results.

Soft gum silks require about 15 min. for soaking. Hard-natured yarns require from 20 to 30 min. Temperature of the bath is usually not over 75° F. Some lots have hard spots or reel marks and require temperatures up to 90° F.

Back-Filling Formula

Technical Editor:

We are sending you a sample of cloth used by a card box manufacturer. We would appreciate it if you will give us the finishing formal. In the specifications are the following, which we believe very important: Ripping-strength in the Elmendorf tester (we believe this tester is used in the paper manufacturing business) warpwise from 65 to 70 points; fillingwise from 90 points up. The finish of the cloth should be such that when the glue is put on the cloth it will not go through. (8756)

A suitable formula for back-filling this cloth would be made up as follows: For 100 gal. of formula, use 80 lb. corn starch, 18 lb. potato starch, 35 lb. dextrine, 80 lb. china clay, 45 lb. 50% sulphonated tallow, and 13 lb. 25% soluble paraffin wax. After back-filling and drying, the cloth should be given a light calendering.

Filling-Yarn Containers

In further reply to the inquiry on suitable containers for carrying cotton filling from the spinning department to the weave room, we are advised that in addition to the two types mentioned in our November issue, specially designed trucks of steel-frame and canvas construction are being employed satisfactorily in many mills.

LOOMFIXERS' MANUAL

WOOL SECTION—Chapter XI

By EUGENE P. SCHREMP

Motor Drives

DRIVES on the W2 and W3 looms manufactured by Crompton & Knowles Loom Works are practically the same, with the exception of the friction gear. The W3 friction gear is larger in diameter, having 192 teeth, whereas the W2 friction gear is smaller, having only 146 teeth. Some of the first W2 looms do not have the self-contained clutch and the locking mechanism is at the shipper handle. This will be described in a later chapter on the shipper motion. The motor-driven friction gear has an oil reservoir which should be kept filled to the level of the shaft. The oil level should be checked whenever a new warp is put in. The friction gear is on the crankshaft, thus eliminating the countershaft. Driving gears are located at each end of the crank- and bottom-shafts.

The bottom shaft is in two pieces and is held together by a two-piece coupling. This coupling is keyed and held together by four bolts. These bolts should be kept tight. The crankshaft has three roller bearings with a cast-iron bearing in the center. The roller bearings run on hardened bushings and wear on the shaft is eliminated. Bearings should be properly oiled and greased. There are also three collars, to eliminate end play; these should be kept tight.

On the head end the crankshaft gear is held on with a key. If it is necessary at any time to remove this gear, the key should be driven out and then a gear puller used. If the gear is driven off with a hammer, the shaft is likely to be sprung and then all kinds of trouble will result. With a sprung shaft, it is impossible for gears to mesh properly and they will wear out in a very short time.

On the drive side, the crankshaft gear and the friction plate are bolted with three capscrews to a combination hub and brake wheel which is keyed to the crankshaft. If one of these capscrews breaks, it is necessary to take off the whole drive in order to remove the screw and install a new one. Care should be taken to keep the nuts on these capscrews tight. Failure to observe this precaution is the most common cause of their breaking. All drive gears should be properly lubricated with grease, as they will wear if allowed to run dry. However, if too much grease is used on the drive side, it may fly onto the brake wheel and cause the brake to slip. In this case the brake band must be removed and cleaned.

If at any time it is necessary to remove a friction plate, top gear, or bottom gear, considerable unnecessary work may result unless the proper method is used. First, the handwheel should be removed. The headless set-screw should be loosened and the key driven out with a key backer. A gear puller which will pull from the hub and not from the wheel itself should be used. If the wheel is driven off with a hammer, the crankshaft may be sprung.

The electric motor has also to be removed; if a box about the same height as the motor table is placed alongside, the motor can be moved out of the way without damaging the electric cable. The electric switch for the warp stop-motion should be also disconnected.

If in removing the shipper lever, the stud in the stand and the pin in the turnbuckle connector are also removed, time can be saved in re-assembling, as it will not be necessary to readjust the shipper lever. Loosen the headless setscrew in the collar that holds the outboard bearing, and remove it from the crankshaft. The mark from the setscrew in the crankshaft should be filed with a fine file and smoothed with emery cloth. If this is not done, it may cause the outboard bearing to stick on the crankshaft, as there is a very close fit. This bearing is tempered very hard and should not be driven with a hammer, as it will crack very easily. Remove the nuts and bolts on each end of the casting that holds the bearing, and slide the whole assembly off the crankshaft. With care this can be pulled without using a hammer.

The clutch assembly should be removed in one unit, by loosening the setscrew in the toggle collar. Care should be taken to mark the collar's position on the crankshaft, so that when the drive is reassembled the collar can be tightened in the same position as before. Moving this collar toward the friction gear increases the friction on the loom. This collar is also keyed on the crankshaft by a Woodruff key. The thrust washer has a stud which fits in a hole in the toggle collar and prevents the thrust washer from turning.

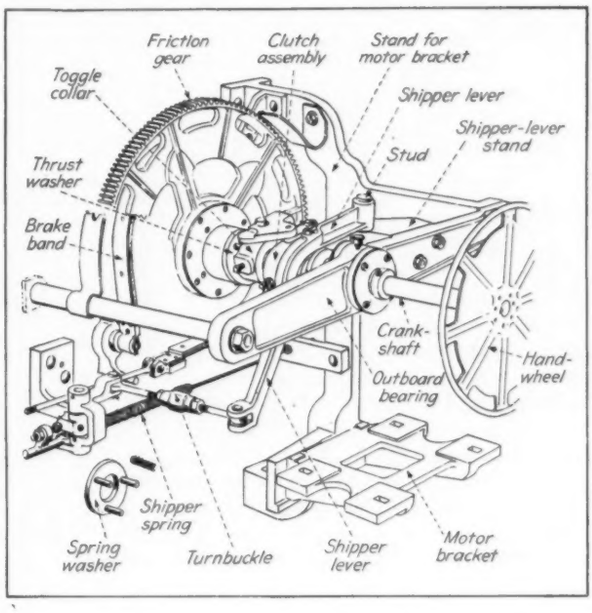
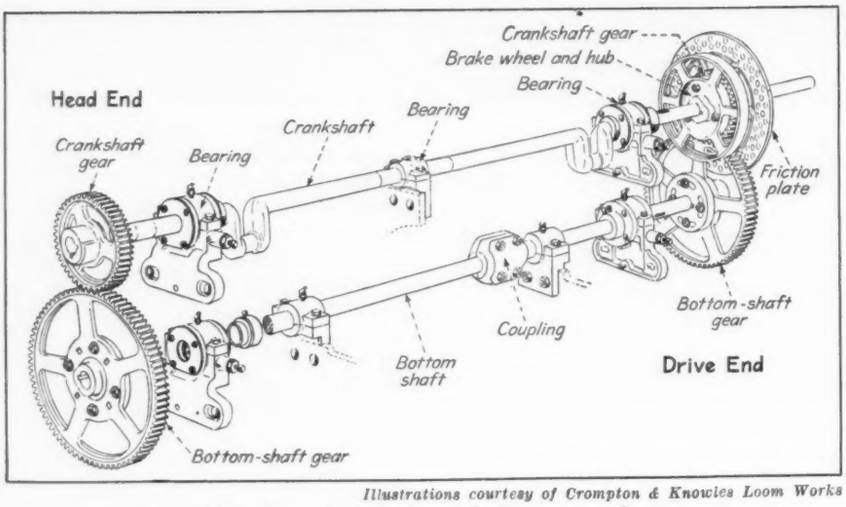


Fig. W12. Drive mechanism of Crompton and Knowles W3 loom

★ ★ ★

With this installment of the Loomfixers' Manual TEXTILE WORLD introduces a new author—Eugene P. Schremp. Mr. Schremp is a practical loomfixer in a large New England mill and an instructor of loomfixing in the Lawrence (Mass.) Industrial School. His articles will deal mainly with the newer mechanisms, with particular regard to automatic looms. Mr. Schremp's training and experience fit him well to carry on the Wool Section of the Loomfixers' Manual, so ably begun by Benjamin F. Hayes' discussions of non-automatic looms.



Illustrations courtesy of Crompton & Knowles Loom Works

Fig. W13. Lengthwise view of driving mechanism

After this assembly has been removed, the friction gear can be taken off the crankshaft. Inside there is a spring washer, with three springs which exert pressure on the friction gear and keep it away from the friction plate when the motor is running and the loom is stopped. The three capscrew nuts that hold the friction plate and crankshaft gear can now be removed, after which the plate and gear will slide off.

If the bottom-shaft gear has to be removed, the large stand for the motor bracket must be taken off. Care should be taken to mark this stand so that when it is put back it will be in the same position. This will save time, as readjustments will not be necessary. When the stand has been removed, the detector cam and cam lever should also be taken off. If the cam is marked and put back in the same position, it will not be necessary to re-time the detector cam. With a double geared loom it is not necessary to time the gears, if they are only removed on one side.

When the four bolts that hold the bottom gear to the hub, which is keyed to the bottom shaft, are taken out, the gear can easily be removed. There are slots in the hub at each end of the bottom shaft which allow the gear to be turned for timing.

In re-assembling the drive, if the teeth on the top or bottom gears are worn, where the loom picks or protects (and they not infrequently are) they should be turned so that picking and protecting will come at a different place. The top gear can be turned to three different positions. When tightening the bolts that hold the bottom gear, care should be taken to have the teeth line up with the other side, or the gears will bind and it will be hard for weavers to turn the loom over. An easy way to do this is to tighten all the gears, then put a drop wire on each side of the teeth that mesh, on top and bottom gears, at the drive side. If play between the teeth is not even, loosen the bolts that hold the bottom gear and so turn the gear that the play between the teeth becomes even. When all parts are re-assembled the motor table should be leveled, as the gears will not mesh properly if the table is not level. The motor should be so set that there is just a little play between the gears. If a piece of paper is run between the gears, the marks left on it will show whether the gears are meshing properly.

COTTON SECTION—Chapter XII (Concluded) and Chapter XIII

By IVAR MOBERG

Filling Cutters

CLOTH DEFECTS caused directly by faulty adjustment of filling cutters are limited to pull-ins. If these are not detected in time, they will constitute major defects and may even be sufficient cause for rejection of an entire cut of cloth. The defect is generally recognized by the fact that there are three ends of filling cut close to the selvage near the temple cutter, rather than only two. When this results from improper adjustment of the cutter, the following faults should be looked for:

1. Knives too dull to cut the filling.
2. Insufficient pressure on the knives, resulting in filling not being cleanly cut, or cut but not held.
3. Cutter knife too sharp on the "off" side, resulting in filling being cut on both sides of the knife.
4. Cutter not moving into proper cutting position.
5. Cutter set so high off box plate that filling whips underneath it.
6. Cutter so set that knife is not sufficiently opened to allow filling to enter between knives.

There are, of course, other causes of pull-ins indirectly attributable to filling cutters. Some of these have been discussed in previous installments and others will be mentioned in coming chapters. Faulty setting of filling cutters will also prevent transfer by striking the shuttle, the box front, the box plate, or the box back. Also, if cutters are so tight that they will not move into proper transfer position, the transfer of the bobbin will be revoked. Sometimes a few drops of light oil is all that is necessary to make a cutter move freely. Keep them well lubricated, but guard against excessive oiling.

Whiproll Motions

WHIPROLL ARRANGEMENTS for cotton looms are of several types, the choice being one of suitability to the particular fabric being woven. Among these types are: single revolving whiproll, single stationary drag roll, double stationary drag rolls, combined single revolving and stationary whirolls, triple stationary drag bars, vibrating whiproll, and oscillating whiproll. The single revolving whiproll, *A* in Fig C85, is used either with or without automatic let-offs on narrow looms and light fabrics. It is not suitable on wider looms on which it is necessary to use a center support, since this has a tendency to form a grayish streak in the center of the cloth due to minute particles worn off through friction at the center support. In this case it is preferable to lock the whiproll, so that it will not turn in its bearings, or use the drag roll shown in *B* of the same figure. Of course, by this arrangement the sensitiveness of the automatic let-off motion is somewhat reduced, but this is preferable to streakiness in the cloth.

On heavier fabrics, double drag rolls as shown in *C* and *D* are frequently used in conjunction with friction let-offs. Although the drag rolls shown in *C* do not give as much surface friction as those in *D*, they are, in the writer's opinion, preferable, since they do not collect lint shed from the warp, as the

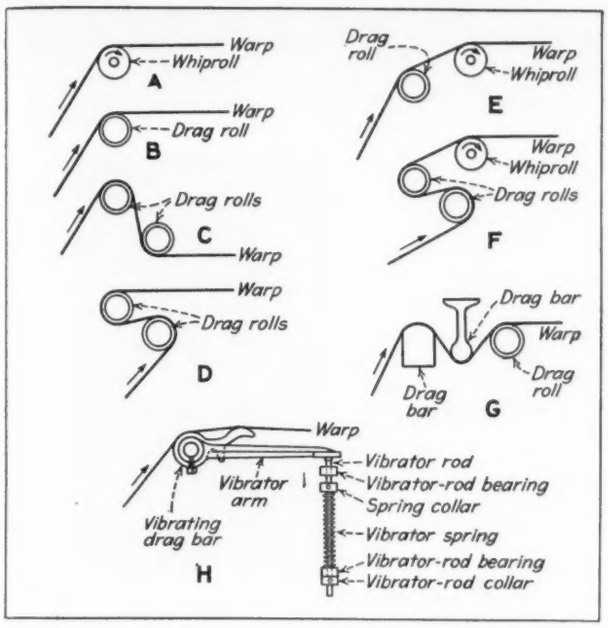


Fig. C85. Whiproll motions of several types

arrangement at *D* has a tendency to do.

The combined stationary drag rolls and revolving whiprolls shown in *E* and *F* are used on wide, heavy fabrics in conjunction with automatic let-off. With this arrangement, the pressure on the whiproll by a heavily tensioned warp is reduced, making it possible to obtain proper warp tension with much less strain on the let-off motion. This results from the reduced pressure angle of the warp against the whiproll, which lets the drag rolls carry most of the load of the warp tension.

Shown at *G* is a triple-drag-bar arrangement used on heavy duck looms. The drag roll can be moved up or down to decrease or increase the amount of frictional resistance on the warp line to proper weaving condition.

One type of vibrating whiproll or, more correctly, vibrating drag bar, is shown at *H*. This is used for light fabrics on narrow looms. The amount of vibration is adjusted by compression or decompression of the vibrator spring by moving the spring collar on the vibrator rod. This arrangement maintains approximately the same tension of the warp during the completion of the weaving cycle. It also reduces the frequence of thin stripes, as a slackening up of the warp will immediately be taken up, to a certain extent, by the rising point of the vibrating drag bar. Another type of vibrating whiproll is the well known Durkin Thin Stripe Preventer, in which a revolving whiproll slides horizontally against spring tension to compensate for variation in warp tension during the weaving cycle. This, also, is used on light fabrics only.

Fig. C86 shows a type of oscillating whiproll. The object of a roll of this type is to ease up on the warp tension when the shed is fully open, so as to relieve the warp ends of excessive tension at this point of the weaving cycle. To set this oscillating whiproll proceed as follows: Place the whiproll shaft in any desired position in the whiproll-shaft bearing, then adjust the height of the bearing until the top of the whiproll is slightly above the level of the warp-stop-motion banks, with the whiproll crank in vertical position. If an oscillating whiproll is used in conjunction with automatic let-off in which the depression of the whiproll governs the amount of let-off, the whiproll should be set approximately ¾ in. above the banks of the warp stop-motion, so that, when the whiproll is depressed by the tension of the warp, it will not be depressed below the level of the warp-stop-motion banks. If the fabric to be woven is heavy and requires considerable warp tension, place the whiproll crank gudgeons in the bearing nearest the whiproll shaft. This will reduce the leverage of the warp tension and decrease resistance of the warp-tension spring required for proper tension. If a light fabric is to be woven, place the whiproll crank gudgeons in the bearing farthest from the whiproll shaft, to increase the leverage of the warp tension.

The whiproll stand should be so adjusted that it will be horizontal when the warp is under proper tension. So adjust the length of the oscillator-cam follower that the point of the cam and the center of the crankshaft would be in line with a perpendicular line drawn from the center of the cam roll. Turn the loom until the cam roll rests halfway up on the cam, and adjust the gudgeon of the whiproll crank in the oscillator-cam-follower hub until the crank is vertical. Tighten the setscrews in this position. Turn the loom until the harnesses are even, and so position the oscillator cam that its point will be directly under the cam roll. If there is a beating back of the fabric, the oscillator cam can be timed somewhat later, or so that it will be directly under the cam roll with the lay on extreme front center, but not later.

This whiproll arrangement can also be used for vibrating whiproll on light fabrics. In such a case, so move the oscillating cam laterally on the crank that the cam roll will rest on the crankshaft itself. So adjust the gudgeon in the hub of the oscillator-cam follower that the whiproll crank will be vertical. Remove the setscrew in the end of the whiproll lever, permitting the lever to rest against the vibrator spring. If necessary, adjust the whiproll stands to horizontal position; this is done by loosening the nut at the end of the whiproll shaft and turning the clutch collar until the whiproll stands are approximately horizontal. The whiproll lever is now free to slide up and down, during weaving, on the spring rod against the resistance of the vibrator spring.

Some oscillating whiprolls are operated by the lay sword. In these cases, the whiprolls are tightening up the warp ends when the lay is at front center. No other timing is possible with this arrangement. With Bartlett automatic let-off the oscillating movement of the whiproll is obligatory.

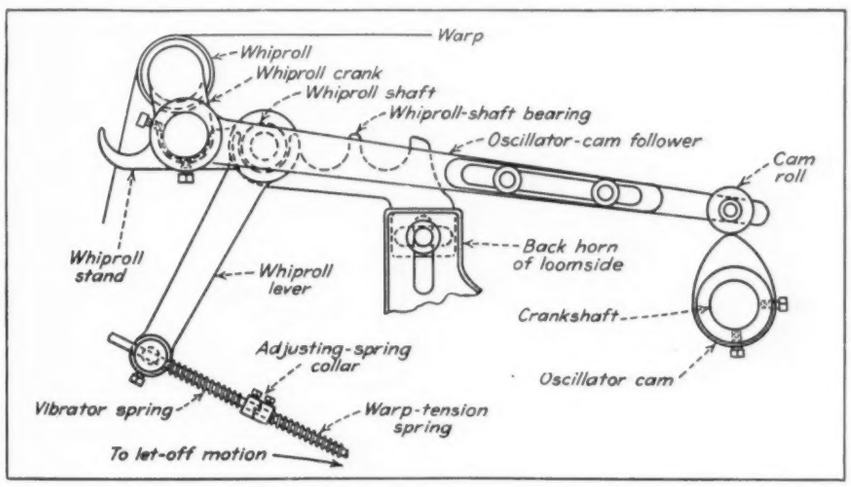


Fig. C86. Oscillating-type whiproll

STAPLE COTTON FABRICS

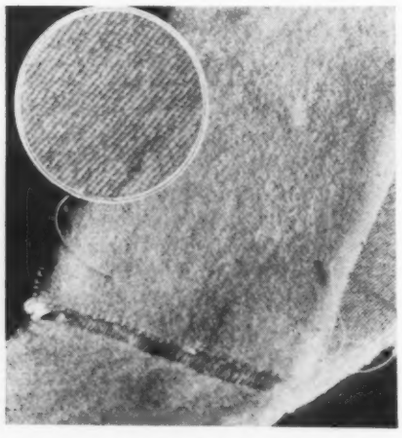
Warp Pile Fabrics

By JOHN HOYE
Fabric Technician with W. Harris Thurston, New York

This fifty-seventh installment of Mr. Hoye's series of articles on staple cotton fabrics — which began in the January 1936 issue — continues the discussion of cut-pile fabrics

Included in this classification are cotton plush, cotton velour, and cotton velvet. In weaving these fabrics, known as double-woven pile fabrics, two fabrics are woven together, face to face, with interlacing ends which later are cut to form the pile. Two distinct ground fabrics are woven, one above the other; each pile end binds or interlaces with the top fabric, then is lowered to interlace with the bottom. Thus, there are two sheds, one directly over the other, and two shuttles are thrown on each pick. The space between the two fabrics is occupied by the interconnecting pile ends. The distance between the fabrics, and consequently the depth of pile, is determined by the setting of gage wires in the reed. Gages are set at twice the pile depth desired in order to allow for pile on both fabrics. For example, to make $\frac{1}{8}$-in. pile, the setting is $\frac{1}{4}$ in.; and for $\frac{5}{16}$-in. pile, it is $\frac{5}{8}$ in.

A traveling knife which passes back and forth across the breastbeam cuts the pile ends when they reach this point and separates the top and bottom fabrics into two separate pieces. Patterns in the two pieces are reversed. The distance between fell and breastbeam (about 6 in.) prevents yarns from being pulled from the cloth in cutting. As a further preventive, the pile ends usually are securely stitched into the ground fabric by "W" order of interlacing which was described in the discussion of velveteens (TEXTILE WORLD, August, 1940, p. 114).



All-cotton deep-pile plush, gray, showing cut and uncut portions; insert shows back

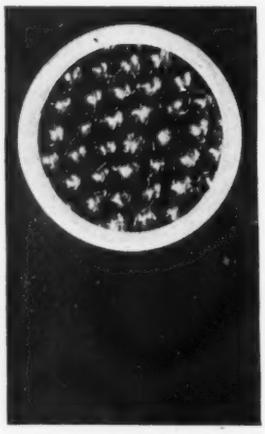
Warp pile fabrics are also made by weaving single cloth in which the pile ends are looped over wires placed across the width of the loom. Each wire has a knife edge in the top which, as the wire is withdrawn, cuts all the ends looped over it. Such fabrics include mohair pile plush and mohair cut freize (with cotton back). Sometimes wires without knives are used in order to produce a looped pile, such as plain freize.

COTTON PLUSH FABRICS have a deep pile, $\frac{1}{8}$ in. or deeper. Plushes are made in two general types: (1) plain all-over plush of solid color, or striped, and usually woven on cam looms; and (2) jacquard plushes with fancy designs and woven in a number of colors. They are made on a cotton ground with pile yarns of rayon, mohair, and plain or mercerized cotton. Plushes are referred to as "one-," "two-," or "three-frame" fabrics, according to the number of different kinds of yarns used in the pile warp. The ground, or back, ends usually are two-ply carded yarns. Plain-woven plushes are piece dyed or printed, and are used for such articles as powder puffs, washable bathroom rugs, draperies, etc. Similar fabrics having a shorter pile are called "velours." They are used for upholstery, draperies, and are embossed for casket cloths.

Striped pile fabrics with cotton back and rayon pile are used widely for upholstering. Distinctive effects are achieved by alternating stripes of viscose filament yarns and cotton-acetate ply yarns. In dyeing, the cotton and viscose take different shades and the acetate remains white.

Mohair-pile plush, with cotton ground yarns, is popular as an upholstering fabric for furniture, car interiors, etc. Long-pile mohair plush is sometimes crushed or embossed to imitate fur and is used for women's and children's winter coats.

COTTON VELVETS are double-woven fabrics with shorter pile than velour or plush; pile depth on velvet is always less than $\frac{1}{8}$ in. Velvets usually are similar in appearance to good qualities of velveteen; they are made in 36-in. widths for apparel use, and in 54-in. widths for draperies.



Cotton velvet, finished: 36 in., 160 ends (80 ground, 80 pile) and 80 picks; 8 oz. finished; insert shows back weave

Plush fabrics go through a number of mechanical operations in finishing. Purposes of the operations are: for removing loose lint; laying the pile in one direction; raising, cleaning, and shearing the pile to secure an even surface; and waxing and polishing the pile. Special finishes include embossed designs, cut-out patterns, and brushed and crushed curled fur effects.

Embossed designs are made by flattening some of the pile with an embossing roll. Cut, or sheared, patterns are made by flattening part of the pile as in embossing, trimming the upright pile, then brushing up the flattened fibers. Stencils are also used for making sheared patterns. In making imitation fur, heat and pressure are used to flatten, crush and curl the fibers. Imitation fur is also dyed and printed to simulate animal skins, such as leopard, tiger, squirrel, etc.

Examples of plush and velour fabrics:

Deep-pile powder-puff plush, all cotton, piece dyed; 54 in., 48x32 ground, 24 ends per in. pile; filling 14/1; warp, 32/2 ground, 22/2 pile.

Cotton-rayon striped upholstery plush, piece dyed; 54 in., ground const. 74x25, 20/2 warp, 12/2 filling; pile, 12 ends 16/2 cotton and 150-den. acetate plied, 6 ends 900-den. filament viscose.

All-cotton upholstery velour, yarn dyed; 54 in., 40x28, ground, 20/2 warp, 16/1 filling; pile, 20 ends per inch of 22/2.

Jacquard upholstery plush, piece dyed; single-woven with cotton ground and rayon pile; 54 in., 74x26 ground, 22/2 warp, 12/2 filling; pile yarn 900-den. filament viscose, 15 ends per in.

TEXTILE PERSONALITIES

SAMUEL Y. AUSTIN

FISHING in the sounds and lakes of Florida, and golfing at Westchester, (N.Y.) Country Club could not permanently attract a man of Sam Austin's human sympathies away from an active business connection.

After leaving the New York office of Callaway Mills where he had been in charge of sales for several years, Mr. Austin spent some time in a semi-retired, care-free existence, although he still remained on the board of directors of the Callaway organization. His experience with this company began back in 1909 when he left the Whittier Mills to supervise the building and equipping of the Unity Spinning Mills, one of the Callaway group. On completion of this project he was made superintendent and at the same time was added to the board of directors.

His skill and comprehensive ability as organizer and executive was early appreciated and he proceeded to supervise the erection of other units, after careful economic studies in this country and in Europe. For several years as vice-president and general manager he carried on, until in 1924 he went to New York as sales manager.

And now his rich experience, and wide knowledge of both manufacturing and sales problems, are brought to another of the South's outstanding textile organizations.

This year of grace, 1940, saw him made president of Avondale Mills, operating plants in seven Alabama communities, a total of 278,500 spindles.

One of Sam Austin's outstanding characteristics is his interest in, and love for, people. His ability to uncover unsuspected ability in young men in his organization has been remarkable. He meets them in the plants, where he wanders around alone at times, and he wins their confidence and loyal support.

His home at Talladega, Ala., is in commuting distance of the various plants of the Avondale group. His Rotary membership is at Sylacauga, the headquarters for the company, but he still retains his club membership at the Westchester Country Club and occasionally plays golf there, shooting in the middle 80's.

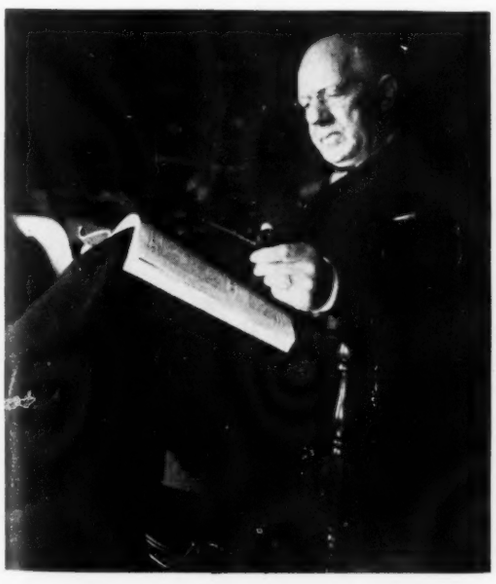
✦ ✦ ✦

LEROY A. BEERS

VERSATILITY is a useful characteristic of a trade association executive. Leroy A. Beers, recently made president of the Institute of Carpet Manufacturers of America, New York, demonstrates that virtue in his career. His early choice was mining engineering, and pursuing this he spent some time in the Hudson Bay country. Turning his attention closer to home, the science of business management attracted him, and, after an apprenticeship elsewhere, he became manager of the then important knit underwear firm of John K. Stewart & Sons, Amsterdam, N. Y. He was also at that time treasurer of the Tryon Mills of Vermont which pioneered on nainsook underwear. Leaving these connections in 1924 he entered consulting work on his own account as an industrial engineer, and helped in the locating and building of several textile mills in the South. A few years later his interests had evolved into the aircraft field and we find him as treasurer of the American Aeronautical Corp., Port Washington, L. I., and still later treasurer of the Great Lakes Aircraft Corp., Cleveland.

In 1934 he began his association with the Carpet Institute, coming particularly to compile the carpet industry's cost manual which the Institute was then planning. This seemed to be the niche which Mr. Beers was looking for, for in 1936 he was made vice-president, and now in 1940, president. He has made numerous contributions to the welfare of his industry, a recent one being his clipper trip to England last winter that resulted in a clarification of the complex wool situation.

Mr. Beers is a native of Connecticut, and he now lives in Douglaston, L. I. He is a collector of fine prints, particularly Currier & Ives. His hunting grounds are the art auctions in New York and print dealers overseas. He is also an amateur photographer of achievement, doing tricks with color photography that would make Currier & Ives and the other print makers of their day green with envy.



Left: Samuel Y. Austin, caught while enjoying his pipe and the news

Right: Leroy Beers, carpet potentate, thinks things over on a log near Blue Mountain Lake in the Adirondacks

NEWS OF THE MONTH

Canada Cuts Textile Imports from U. S.

To conserve its exchange for purchase of American munitions, Canada has curtailed or prohibited the importation of a wide range of "peace" products from the United States, including practically all textiles and clothing. The order, under Canada's War Exchange Conservation Act of 1940, became effective Dec. 2 for the duration.

On the curtailed list are silk yarns, warps, wastes, roving yarns and warps, sewing and embroidery yarns and twists. Prohibited are substantially all wool, cotton, linen, rayon and silk cloth and nearly all clothing, household textiles, tentage, ribbons, trims, knit goods, narrow goods. Cotton fiber is absent from any restriction list, being a strategic material in Canada. The largest increase in U. S. textile exports this year has been to Canada, and the loss will be especially felt in cotton cloth.

Wool Labeling to Be Voluntary Till July 14

Various divisions of the wool goods field are hot with conferences on labeling problems in anticipation of July 14 when the Wool Labeling Act will go into effect. A clothiers' association is trying to learn the attitude of the F.T.C. toward existing stocks, pointing out that some stores carry suits and overcoats for four or five years. Retail associations and mill men are setting up committees to iron out procedures. One group favors a uniform form of label. It is believed wise to start labeling at once, but it is recognized that such is possible only by voluntary cooperation. Clothiers are worrying over the effect of the labels on the consumer.

FABRIC from Terhune, Yereance & Wolff is blended of Tennessee-Eastman's Teca, viscose rayon and wool (31%), and has downy softness yet resists crushing and sagging. Garment is typical of new note in play suits—a type of boyish tailoring.

Hosiery Conference Jan. 9-10, 1941

The annual hosiery industry conference, sponsored by the National Association of Hosiery Manufacturers and the Southern Hosiery Manufacturers Association but open to all members of the industry, will be held on Jan. 9 and 10, next, at the Waldorf-Astoria, New York. As in past years speakers of national importance will be selected to talk upon the various subjects which are uppermost in the minds of the industry in scanning the horizon of 1941.

Britain Plans Carefully to Maintain Her Wool Goods Exports

A plan for the decentralization of Britain's woolen and worsted mills, and for sharing work on export orders is currently reported as highly successful. It is instanced that in one recent month £2,419,598 worth of woolen and worsted yarns and manufactures were shipped overseas. Numbers of these mills are now hidden far away in the hills. If, by the odd chance, an enemy bomber does make a hit on one of them, the work being done there is, by a scheme for mutual cooperation, immediately transferred to another.

W. D. Anderson Talks to Textile Club

The Atlanta (Ga.) Textile Club concluded its speaker program of the year at the November meeting when a record number turned out to hear W. D. Anderson, president, Bibb Mfg. Co., Macon, Ga. Mr. Anderson was introduced by George Henderson, of the Trust Co. of Georgia, and spoke interestingly on problems of today and tomorrow.

The program committee for the year, composed of Harry Richardson, chairman, H. C. Allen, Jr., and Ransom Burts, announced that election of officers for 1941 would be held at the December meeting. Among the speakers heard at various times during the past year, were Chas. F. Palmer, Washington, D. C.; Prof. Chas. A. Jones, Georgia School of Technology; Maj. L. Sullivan, Commissioner of Public Safety, State of Georgia; T. M. Forbes, secy., Cotton Manufacturers Association of Georgia.

Irrigated Versus Rain-Grown Cotton

The Agricultural Marketing Service of the U. S. Department of Agriculture released in early November interesting results of spinning and fiber tests on irrigated and rain grown cotton from the 1939 crop. Representative samples of the crop in each area (Mississippi Delta section and the California-Arizona-New Mexico-Southwest Texas territory) were tested at the U. S. Spinning Laboratory at Clemson, S. C.

Grade for grade these tests showed that cotton having staple lengths of $1\frac{1}{16}$" and $1\frac{1}{32}$" produced in the Mississippi Delta territory yielded less manufacturing waste than those from sections where the cotton was grown under irrigation. Irrigated cotton showed up better in the matter of less waste in the longer staples. However, the tests showed that yarns

made from 1⅛" cotton from the Delta averaged approximately 4% stronger than those made from California cottons. In all three staple lengths (1 1/16", 1 3/32" and 1⅛") rain watered cotton yielded yarns 2% to 11% stronger than yarns made from irrigated cotton. The rain-grown cotton yarns were more satisfactory in appearance and fabric made from these yarns were easily distinguished from those made of irrigated cotton.

Laboratory tests proved, however, there was no difference in the manufacturing behavior of the two types of cotton.

Regain Standards for Mercerized Yarn

A recommended revision of the Commercial Standard for Regain of Mercerized Cotton Yarns has been submitted to producers, distributors, and users of cotton yarns for their approval prior to final adoption. The revised standard covers definitions, requirements, methods of sampling, recommended guaranty, and calculations for making adjustments in invoice weights.

Textile Engineers Hold Meeting

The Textile Division of the American Society of Mechanical Engineers held its annual meeting Dec. 4, in New York. Technical papers presented were on water supplies for the textile industry, treatment of textile wastes, applications of anti-friction bearings, and drying of textiles.

New Uses for Strong Rayon

The trend toward use of high-strength rayons in household and apparel fabrics became increasingly evident last month when several fabrics made from these yarns were introduced. These new fabrics include organdie, ninon, and marquisette types made from Du Pont's Cordura; sheers made from Cordura and North American's Nardura; and lingerie and dressing gown fabrics made from Nardura.

Pacific Will Hereafter Buy Its Rayon Gray Goods

Pacific Mills, on Nov. 6, announced that rayon weaving was being discontinued at the Lawrence, Mass., and Dover, N. H., plants of the company, which plan does not affect rayon finishing in Lawrence or merchandising in New York. The company will buy rayon gray goods to meet its needs.

Rayon manufacture at Lawrence and Dover was started when cotton manufacture became uneconomic there, in the hopes of continuing these plants in operation. The company now states that these rayon divisions have not proved successful. The mills on these lines will be closed and such machinery as the company does not need will be sold. It is pointed out that practically all rayon women's wear is handled by converters, without plant tie-ups, and now the Pacific product will be handled in a similar way.

Sea Island Crop

Approximately 1,800 bales of Sea Island cotton have been ginned from this year's Florida crop. Samples graded ran No. 1 — 10%, No. 1½ — 33%, No. 2 — 42%, No. 2½ — 12%, No. 3 — 2%, and lower grades 2%. Some 990 samples tested by the Government for staple lengths show that 540 samples were 1⅝ in., 303 were 1 7/8 in., 95 were 1 13/16 in., 49 were 1½ in., and a few other samples were of miscellaneous lengths. The crop was harvested from 9,688 acres. Average prices paid during the season were 37c. for No. 1, 34c. for No. 2; during recent weeks No. 1 reached a top price of 38c.

TEXTILE MILL SIDELIGHTS—No. 20

"Sniffle says inheritin' all that money from his rich uncle ain't gonna make a bit of difference with his work."

Unfavorable weather conditions reduced the anticipated crop of 2,500 bales to 1,800 bales, in comparison with 1,110 bales in 1939, 1,898 in 1939 and 3,072 bales in 1937. Little damage was experienced from boll weevils this year because the planting season was 30 to 40 days late and was followed by extreme drought and wind.

Color Fastness on Spun Rayon Fabrics

The problem of obtaining sufficiently fast colors on spun rayon fabrics was discussed by Henry F. Herrmann, of General Dystuff Corp., at a meeting of the Textile Square Club, held last month in New York. Mr. Herrmann pointed out that the growing use of spun rayon in children's garments and in men's sportswear call for a high degree of color fastness. If the garments are to give satisfaction, they should withstand a 40-hr. Fade-Ometer test and a 140° F. Launder-Ometer test. To obtain the desired fastness, use of vat dyes is recommended.

Private Control of Wool Trade Favored

"As long as we stay out of war, procure an adequate supply of wool, and don't run up the price too much, we will probably avoid Government control", declared Percy E. Sheldon, newly-elected president of the Boston Wool Trade Association at the recent annual meeting of that organization. In the coming year, he stated, a tremendous volume of wool will be processed. Government orders will continue in substantial volume throughout. There is a possibility of foreign orders, and civilian business will pile in just as soon as it becomes evident that deliveries will be delayed or cannot be made at all.

"Should a state of war be declared," Mr. Sheldon said, "the first thing Washington will suggest is taking over the wool business. That for us will mean one big sale and then a job with the Wool Administrator. Government in the wool business is unnecessary from a military standpoint. It will

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bring no results that cannot be obtained if the business is left in private hands. It will be better for all interests, growers, manufacturers, and dealers here in Boston if the Government can be kept out. Most important of all, when the war is over, the period of readjustment will be avoided, which after the last war meant trying to use up a flood of wool which no one wanted, even at forced sale values, and maintaining wool production in the West at the same time."

Other officers elected were: Allan C. Emery, vice-president, and C. Willard Bigelow, secretary-treasurer. The executive committee includes O. W. Forte, L. P. Hills, G. N. McKee, H. Clyde Moore, Hugh Munro, T. C. Thacher and C. C. Wilcox.

Fiberglas Developments

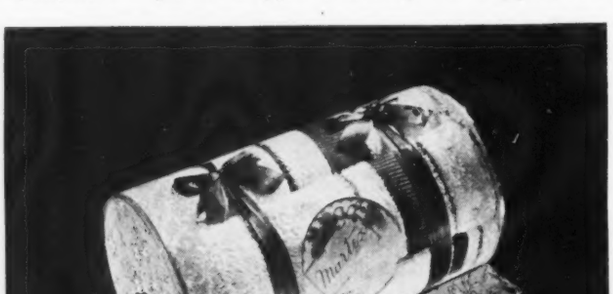
New Fiberglas textiles which are now emerging from the experimental state were shown by Owens-Corning Fiberglas Corp. at its second anniversary party held last month in the Waldorf-Astoria, New York. Among the new products exhibited were balloon fabrics, airplane cloth, awning cloth, artificial leather made with Fiberglas backing, strands for tying packages, cords and cables treated with a recently developed finish to increase resistance to abrasion, and a fine fiber having a diameter (less than 2 microns) said to be smaller than that of any synthetic fiber hitherto produced.

Cheney Starts Classes in Silk Weaving

Faced with a skilled labor shortage in the handling of large defense commitments, Cheney Bros. Co., Manchester, Conn., is starting classes in silk weaving instruction for men and women. Vice-President Henry R. Mallory stated that this expansion is necessary because of the recent placing of Government orders with the company for over 1,000,000 yd. of parachute silk as well as material for powder bags and neckerchiefs.

October Shipments of Hosiery at Record High

A new record for mill shipments of hosiery was established during October, according to the National Association of Hosiery Manufacturers. During that month a total of almost 14,109,000 doz. pr. of all types of hosiery was shipped, com-



STUNNING COLORS, fluffy towels, and inspired packaging combine in the new Martex gift package. The Lumarith Protectoid and flowered board package is intended for re-use as a knitting stand. The package was built and designed for Martex by Atlanta (Ga.) Box Factory. Lumarith Protectoid is a product of Celluloid Corp.

DR. HARRY A. MILLIS, named by President Roosevelt and confirmed by the Senate to succeed J. Warren Madden as chairman of the three-man NLRB. Madden's term expired last August. Since then Dr. William Leiserson and Edwin S. Smith, the two other members, have failed to agree and so could not reach decision on some issue. Smith had usually voted with Madden in opposition to Leiserson. Dr. Millis has served on the economics faculties of several colleges and was, at the time of his appointment, at the University of Chicago. He was also serving as conciliator for General Motors and CIO's United Automobile Workers. He is regarded as unprejudiced on industrial relations, and is expected to agree with Leiserson in general, which would put Smith in a minority position. This appointment means that the Administration will support labor only within limits in face of the defense effort. Administrative moderation of the law as a result of appointment of Millis will quiet much industry criticism of the NLRB, but the anti-NLRB bloc in the House of Representatives will continue to demand drastic amendments, which have already been passed by the Senate.

pared with 13,156,000 doz. pr. shipped during October 1939. Nearly 4,750,000 doz. pr. of women's full-fashioned hosiery were shipped, which was about 3½% more than the previous shipment peak of 4,592,000 doz. for October, 1939. Total seamless hosiery shipments during October amounted to 9,363,000 doz. pr., compared with previous shipment record of August 1939, of 9,086,000 doz. pr.

Textile Markets Generally Strong Through November

Cotton goods have been steady with business focused on twills, drills and combed broadcloths such as are used in Army goods. Prices were up ⅛ to ¼¢ per yard. Small-lot business in other lines. Denims, 2.20s, firm at 13¢.

Wool goods prices were strong and sensitive to demand. Mills are well sold for March-April period. Unfilled orders for civilian wear were estimated at 30,000,000 yds., which is outside of the large defense contracts. It is a matter of wonder whether prices can be kept down to reasonable levels during coming months.

Rayon remains steady with possibilities of higher prices after the turn of the year. Fine counts and pigment yarns are notably tight. Pigment taffetas remain a leading fabric item. Spun rayon is strong with marked increases expected next year as wool becomes scarcer. An advance of 2¢ on 150-denier knitting rayon on cones was made on Dec. 3.

Silk did not hold the advanced prices reached in October and returned to previous average levels. October's increased demand was largely covering against Far East belligerency, and, as that cools off, demand slackens. Japan is arranging further means for stabilizing at 1350 yen for 78% 13-15s.

Hosiery has benefited from seasonal expansion ahead of the Christmas trade. Nylon hosiery has been jacked up into higher brackets and direct competition with silk is less. Retailers are protesting the situation.

Underwear mills are well sold ahead, and prices, espe-

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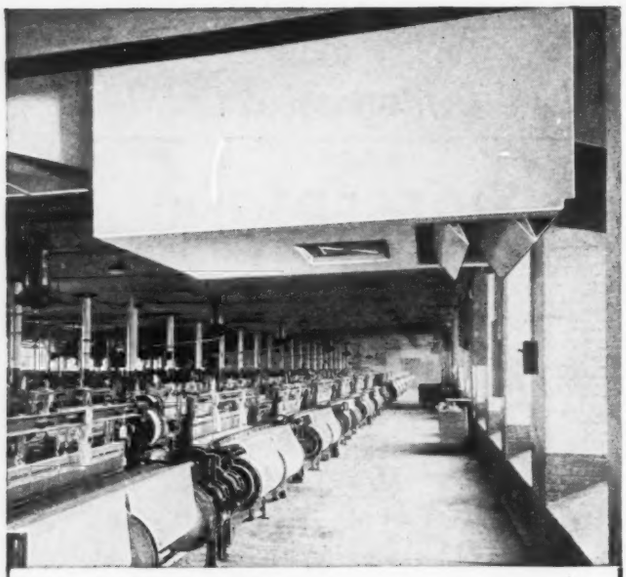

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In developing the modern Airchanger idea for you, we started to answer the questions you textile men have been asking. Why up and down humidity? Why spotty conditions?

The Parks Automatic Airchanger measures incoming air. Admits only just so much. Just as much as constant humidity will permit — and NO MORE.

In hot weather it gives you all the evaporative cooling the humidifiers can develop. Keeps them running. Lets in as much air as possible.

On the contrary, the cooler the weather, the more the incoming air is restricted.

But all the time it is the humidity that stays put—and in all parts of the room.

It is that kind of automatic regulation that makes it an Airchanger. And only the Parks Automatic Airchanger has regulation like that.

Parks-Cramer Company
Certified Climate
Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

cially on combed yarn numbers, have been advanced for next spring.

Outerwear has experienced a good fall, and spring season finds many makers well booked ahead.

This and That

F. Eugene Ackerman, New York merchandising counsel, in speaking before the California Wool Growers Association's annual meeting in San Francisco, Nov. 16, warned that unless growers safeguarded the integrity of wool in the face of steady exploitation of its synthetic competitors, wool would be relegated to a secondary position in the domestic market.

Swiss authorities barred sale of all articles made of wool on Oct. 31 to check hoarding and pending issuance of ration cards.

Definite steps are reported from Buenos Aires toward setting up a wool futures market under the name "Mercado a Termino de Frutos del Pais". It is understood the contract will call for fine washed wool, 60-64s grade.

DuPont exhibit at New York World's Fair attracted 9,734,438 visitors for the two seasons it was open.

"Fiber Mechanics" was the topic of a talk by Dr. Harold De Witt Smith, A. M. Tenney Associates, at the November meeting of the American Association of Textile Technologists, in New York.

The annual luncheon-meeting of Philadelphia Wool & Textile Association, held Nov. 1 in Philadelphia, heard addresses by Herbert J. Wollner, developer of a new technique for determining clean content of wool, and Dean M. Earle Heard, of Philadelphia Textile School.

Southern headquarters of Textile Workers Union of America, an affiliate of the C.I.O., was moved from Atlanta, Ga., to Charlotte, N. C., recently. Office will be in charge of Roy R. Lawrence, southern director of the T.W.U.A. The Charlotte office will take over the Spartanburg, S. C. office.

Corinth, Miss., is the first city to announce plans for cooperating with the National Cotton Council in promoting the Cotton Christmas this year.

Six Rust cotton pickers are in the field on a commercial basis this year. The pickers are operating in the Mississippi Delta under the direction of Mack and John Rust.

Chamoisette has been introduced by Julius Kayser & Co. in a line of gloves made in this country. Formerly this fabric was obtainable only in Europe.

Massachusetts Department of Education, University Extension, announces a course on textile fibers and fabrics, instructed by Laurence W. Guild of L. W. Guild & Co., Boston, to be held on 16 Tuesdays beginning Oct. 29, in Room 305, Building 3, M.I.T., Cambridge.

National Association of Waste Material Dealers, New York, has appealed to the Advisory Commission to the Council of National Defense to create a separate section within the commission in charge of waste or secondary raw materials.

The Cotton Board of Manchester, England, has designed and made available to manufacturers an identification tag for use on articles made of British cotton fabrics. The tag guarantees the fabric to be of genuine British make, and carries the slogan "Lancashire is the largest customer for American cotton."

"Sylbroc" is a new raw material, half spun-silk and half long-staple Fibro, made by Brocklehurst-Whiston Amalgam-

TEXTILE CALENDAR

Hosiery Industry Conference, Waldorf-Astoria Hotel, New York, Jan. 9 and 10, 1941.

Southern Textile Exposition, Textile Hall, Greenville, S. C., March 31-April 5, 1941.

Knitting Arts Exhibition, 37th annual show, Commercial Museum, Philadelphia, April 21 to 24, 1941.

ated Ltd., London, England. Its utility is in the production of yarns and fabrics with, as far as possible, all the properties of pure spun silk. It is much cheaper than the latter, and permits the silk available after meeting British Government requirements to go much further.

"Celamerica", the brand name of products manufactured by Celanese Corp. of America, was the 60,000th trade name registered by the Trade Mark Bureau of the National Federation of Textiles, New York. That name "went through the mill" on Nov. 20, which, by coincidence, was only 26 days short of the 26th anniversary of the launching of the Bureau on Dec. 16, 1914, under the auspices of the old Silk Association of America, predecessor of the Federation. The file includes all names registered at the U. S. Patent Office, and a large number recorded and used by firms which have not so registered them.

Textile Industries Service Institute, Inc., was organized last month to provide rayon and silk dyers with a detailed cost system, data on fabrics costs, fabric analyses, arbitration of disputes, financial assistance, and other services. Abraham Axelroad is executive director, with headquarters at 8 West 40th St., New York.

Arrangements for laundry testing and possible approval of fabrics made from Eastman rayon yarn have been completed by the American Institute of Laundering and Tennessee Eastman Corp. Fabrics passing the tests and garments made from these fabrics will be permitted to carry the Institute's "Laundry-Tested and Approval Seal."

There is talk of extending the cotton stamp program beyond all limits originally considered, possibly to as many as 25 communities, within the early winter. These reports were unofficial as this was written.

Textile School of North Carolina State College will conduct a short course giving intensive instruction in the manipulation and dyeing of rayon, during the spring quarter of the present school year, probably during the first two weeks in May. The course will be open to all persons connected with the textile industry, as well as to upper classmen in the school.

Charlotte, N. C., was one of the two new cities to enter the list of cities with population of 100,000 or over, in the 1940 census. Charlotte showed the remarkable gain of 21.4% over the census 10 years previous.

Textile requirements of Canada for military purposes have been met this year without a substantial shortage in civilian needs and without undue stress upon manufacturers, due to the fact that the industry voluntarily mobilized itself at the outset of the war. Canadian textile mills are now employing over 6,000 more operatives than at this same time last year.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., recently presented to the school children of Rock Hill and to Winthrop College students bright new American flags, 12x17 in., printed at the big finishing plant; 6,570 flags in all.

Hydrogen peroxide H_2O_2

Dependable for bleaching all textile fibers and fabrics

For all the bleaching requirements of the textile industry, hydrogen peroxide is both effective and dependable. Pennsylvania Salt Manufacturing Company produces a highly stable 100 volume hydrogen peroxide with uniform oxidizing power.

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Hydrochloric Acid	Anhydrous and Aqua Ammonia

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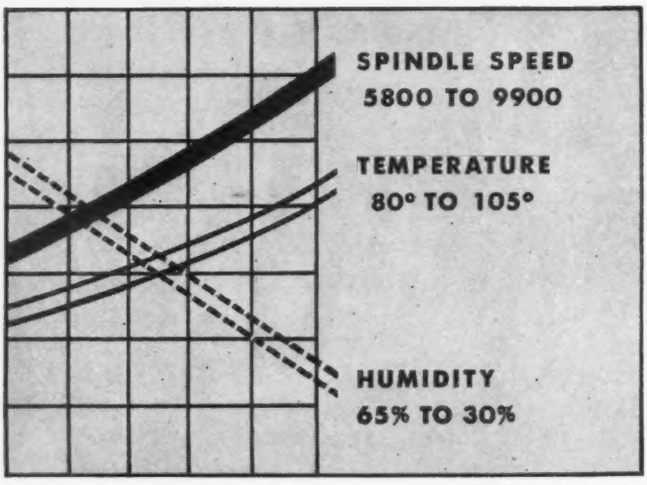
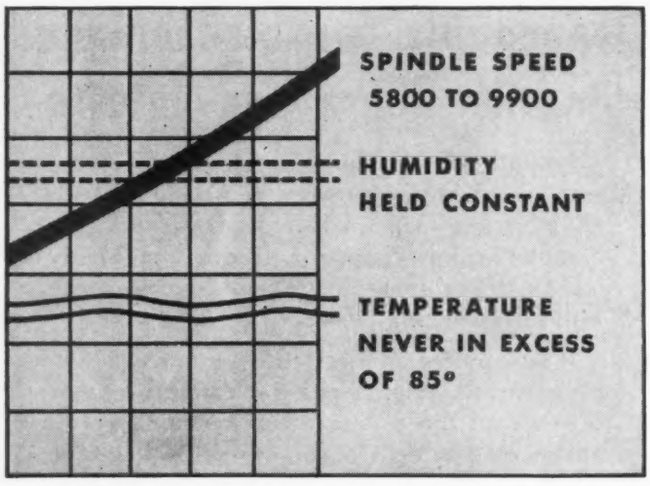
PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals

When This Mill Jumped Spindle Speeds

WHAT MIGHT HAVE HAPPENED...



WHAT DID HAPPEN--WITH AMCO...



The problem of increase in generated heat, resulting from higher speeds, is one faced by many mills today. The solution of this problem is within the easy reach of your Amco engineer, with his years of experience in process studies of cotton, rayon, woolen and worsted manufacture, and with the complete Amco line of engineered humidifying devices to back him up. If you now face this problem, or if you anticipate it, why not write Amco today? American Moistening Company, Providence, R. I. . . . Boston, Mass., Atlanta, Ga., Charlotte, N. C.

AMCO *Humidification*

Wage-Hour Law Analyzed

(Continued from page 90)

A second hand is not exempt from the law if he does more than 20% of the same type work that a non-exempt employee does. A worker can come in after hours and learn a new job provided nothing he manufactures goes into commerce. It is not permissible for a learner to work on a productive machine with an experienced employee if the learner's work goes into interstate commerce. An employee who works 40 hr. in one department is not allowed to go into another department and work for nothing just to learn the trade if goods are being produced there.

A "professional" man is a person who has a recognized college degree in his profession and is working at that profession. If he is placed in work other than his profession, he must be paid overtime if his weekly wages are less than $20. Traveling time of a young engineer classes as a "professional" man is included as part of his working time if he earns less than $200 a month. An "outside salesman" who drives a truck more than 20% of his time is classed as a truck driver and is not exempt from the law.

If an employee works 10 hr. overtime, his hourly rate for the overtime must be based on the higher rate of pay whether it be for the first 40-hr. work or the last 10-hr. work. If an employee spends part of his time in productive work and part of his time in cleaning machinery, his overtime rate must be based on the higher hourly rate.

PIECE-WORKERS' OVERTIME WAGES have to be stated on the payroll in rates per hour, which are arrived at by taking the number of hours worked a week and dividing them into the total wages. The worker must be paid time-and-a-half on this basis, regardless of the amount of piece-rate work he does during his overtime period.

Government contracts above certain minima come under the Walsh-Healey Act; the mill has to pay straight time for 40 hr. and time-and-a-half for all time over 40 hr. The worker is not supposed to work more than 8 hr. per day.

A master mechanic is considered a working foreman and is exempt from the provisions of the law provided he spends no more than 20% of his time in the sort of work done by the men under him.

A mill hiring an outside contractor to overhaul machinery or build a warehouse is jointly responsible with the contractor for payment of the minimum wage to the contractor's workers. The contractor is primarily responsible, but the mill must make it its business to see that he complies with the law. If he does not pay his workers time-and-a-half for overtime, the mill may be called on to pay it.

The minimum age of an employee working on Government contracts is the responsibility of the mill, and it is advisable to ask for birth certificates where there is doubt as to age.

The Federal law has no limitations as to the number of hours a man may work, providing he is paid time-and-a-half for overtime. However, most mills come under some kind of State law which limits hours.

If an employee works overtime on a different job, such as a weaver doing a battery hand's job, the employee must be paid time-and-a-half at the higher rate. If an employee is affected by both Federal and State laws, the employer must comply with the law giving the most benefit to the employee.

TECA* BLENDS

REG. U. S. PAT. OFF

have *spun-in stability*

. . . built-in resistance to shrinking and stretching

Spun-in stability. . . steady, uniform resistance to shrinking and stretching . . . that's what is winning the approval of the American Institute of Laundering for Teca Blends . . . The stability of Teca Blends does not depend on special finishes, but goes fiber deep. When wet, Teca does not swell as much as other fibers, consequently undergoes little or no change in laundering. In blended yarns, Teca acts as a steadying influence on other fibers . . . Men's and women's garments of launderable TECA BLENDS, made to approved specifications, will be entitled to this official label guaranteeing acceptance of the garments for laundering by the 2,200 leading laundries comprising the Institute's membership. To learn how this laundry approval program can apply to your fabrics, consult . . .

A. M. TENNEY ASSOCIATES, INC. 10 EAST 40TH ST., N. Y. C.

Sales representatives for Tennessee Eastman Corp., subsidiary of Eastman Kodak Co.

***EASTMAN CRIMPED ACETATE RAYON**

KNOWN by the FRIENDS IT KEEPS

FOR many years EXSIZE has been used by a large and ever-growing list of finishing plants. We are proud of this long record of continuous service, because it proves that EXSIZE is unsurpassed for the thorough removal of starch size at low cost. Let EXSIZE help solve your problems, too.

DESIZE with EXSIZE

Our laboratory facilities and practical field men are available to help you with desizing problems.

PABST SALES COMPANY, CHICAGO, ILL.

Warehouses at New York, and Textile Warehouse Co., Greenville, S. C.

Copyright 1940, Pabst Brewing Company, Milwaukee

NEWS ABOUT MEN

William Myers, Jr., has been appointed general manager of United States Finishing Co. and of Queen Dyeing Co., Providence, R. I. He succeeds **John G. Bausher,** who recently resigned as vice-president and sales manager of the United States Finishing Co. and Queen Dyeing Co., after 27 years with the firm. **Royce N. Pharr,** who has been associated with the company's plant for 17 years, has been appointed sales manager. Mr. Myers has been with the company since 1922 and has at various times been connected with the company's plants at Silver Spring, and Norwich, as well as with the Queen Dyeing Co.

G. Leonard Glen, assistant professor at Lowell (Mass.) Textile Institute, has been appointed to head the finishing department of that school, succeeding the late Professor Arthur A. Stewart. Professor Glen, after an apprenticeship with finishing companies in the field, joined the staff of the Institute in 1916. **Winford S. Nowell,** from the finishing department of the Ames Worsted Co., has been made assistant professor succeeding Mr. Glen.

Gordon Pannill has been elected president and treasurer of Pannill-Walker Underwear Co., Martinsville, Va. **S. S. Walker** is vice-president and **Banks Pannill,** secretary.

William E. Winchester, for the last 35 years with Deering, Milliken & Co., New York, will retire from active business on the first of the year, giving up a vice-presidency in that company as well as offices and directorship in many southern textile mills. Mr. Winchester is a native of Providence and a graduate of Brown University. He taught for seven years before joining Deering, Milliken in 1905. He was admitted to the firm in 1918.

D. W. Anderson has been elected president of Gainesville (Ga.) Cotton Mills, succeeding **W. E. Winchester** of New York. **H. A. Hatch** was elected vice-president and **Roger Milliken** was elected a director. **Marshall Stone** was elected secretary-treasurer succeeding **Yates Smith.**

H. A. Hatch, of New York, has been elected president of Monarch Mills, with two units at Union, S. C., and one at Lockhart, S. C., succeeding **Wm. E. Winchester,** who retired as president. Vice-president and treasurer **D. W. Anderson,** of Spartanburg, S. C., and **J. Roy Fant,** of Lockhart, secretary and assistant treasurer, were re-elected. **Roger Milliken,** of New York, was elected a member of the board of directors, succeeding Mr. Winchester.

THOMAS J. WALLNER, who was recently guest of honor at a dinner given by his employees on the occasion of his 50th birthday, as reported in these columns last month. He is president of four hosiery companies at Pulaski, Va.

R. O. Arnold of Covington (Ga.) Mills has succeeded the late L. R. Edwards as president and treasurer of the Mallison Braided Cord Co., Athens, Ga.

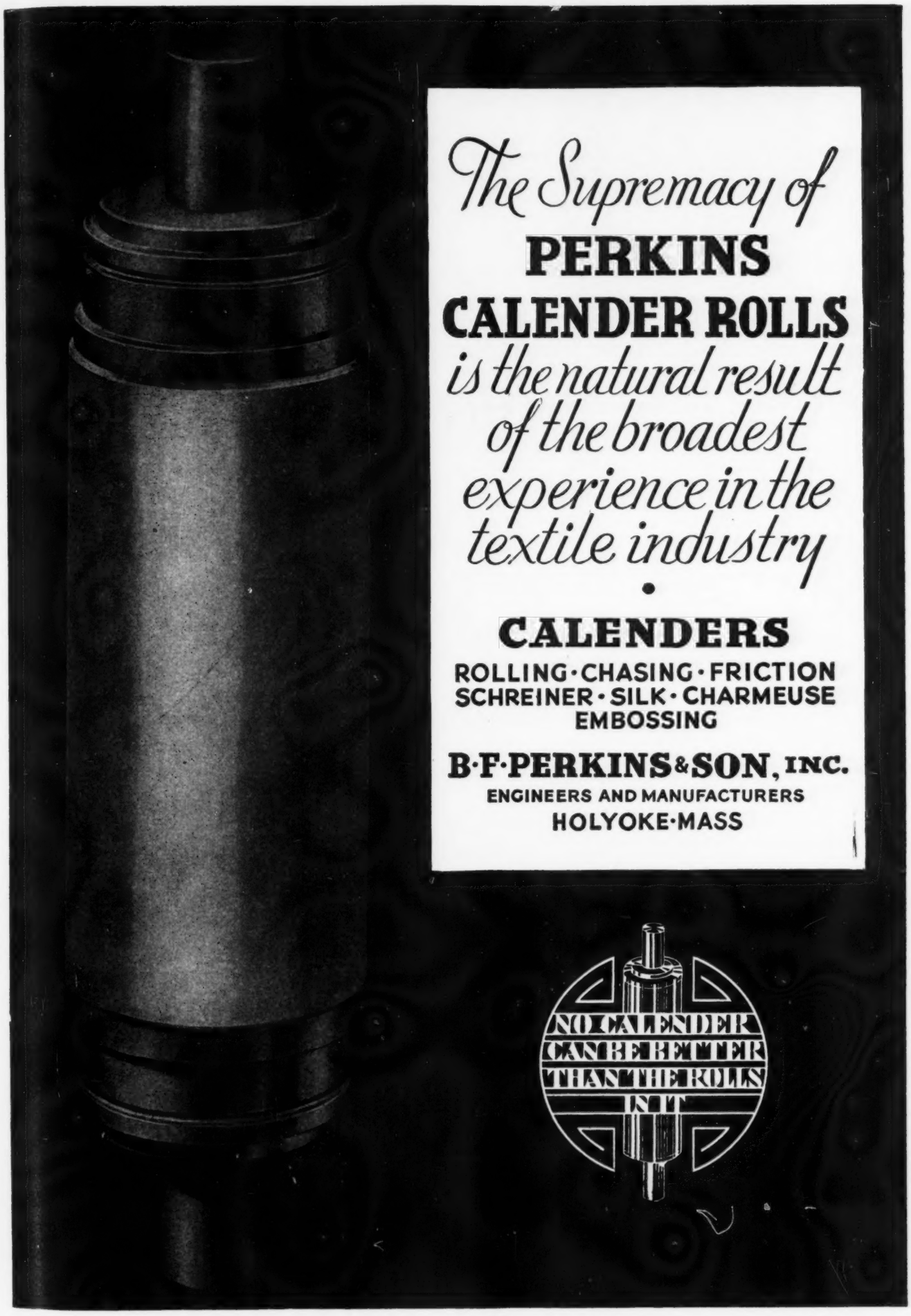
Donald Comer, chairman of the board of directors of the Avondale Mills, Birmingham, Ala., has been chosen one of four new trustees of the Julius Rosenwald Fund.

J. E. Sirrine, first vice-president and chairman of the board of the Brandon Corp., and head of J. E. Sirrine & Co., and **W. G. Sirrine,** head of the Textile Hall Corp., in memory of their parents, the late Mr. and Mrs. George W. Sirrine, made possible the recent improvements at the General Hospital at Greenville.

Bascomb B. Blackwelder, president of A. A. Shuford Mill Co., Hickory, N. C., has been named president of the Hickory Chamber of Commerce.

John R. Raible, president of the Fanner Mfg. Co. and chairman of the board of Greif Bros. Co., has been elected a director of the Cleveland (Ohio) Worsted Mills Co.

Charles H. Borne, formerly of Kenwood Mills, has been appointed sales manager of the Barbour Mills, Brockton, Mass., with headquarters in New York.


The Supremacy of
PERKINS
CALENDER ROLLS
is the natural result
of the broadest
experience in the
textile industry
CALENDERS
ROLLING · CHASING · FRICTION
SCHREINER · SILK · CHARMEUSE
EMBOSSING
B·F·PERKINS & SON, INC.
ENGINEERS AND MANUFACTURERS
HOLYOKE·MASS
NO CALENDER
CAN BE BETTER
THAN THE ROLLS
IN IT

For
CLEANING
RAYON and SILK
LOOM BOBBINS

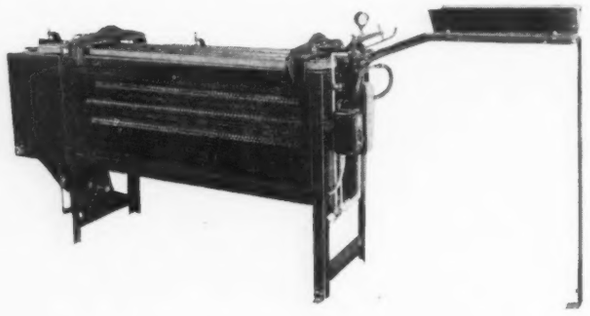
THE NEW TYPE "L" OFFERS
Important All-around Savings

As compared to hand or reel cleaning, the Type L production is two to five times as great, depending on quill design and type of feeler waste.

Where cleaning is done at the loom by the weavers, the Type L relieves these highly skilled operators of unskilled tasks—thus increasing their productive efficiency.

The machine is built to handle your quills efficiently, economically and SAFELY. Air cleaning eliminates any possibility of damage to the finish that might cause frayed or broken filling, often resulting in weaving seconds.

The savings in labor alone usually pay for the machine in one year—always within two.



The **Terrell Machine Co.,** *Inc.*

CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn. — N. E. & Canada
E. W. S. Jasper, Elizabeth, N. J. — Penn. & N. J.
Geo. Thomas & Co., Ltd. — Manchester, England

NEWS ABOUT MEN

John F. Horstmann, of I. J. Horstmann & Sons, Philadelphia, was chairman of the dinner committee of the Philadelphia Wool & Textile Association, for the annual dinner dance held Dec. 7 at the Penn Athletic Club.

Robert T. Stevens, president of J. P. Stevens & Co., New York, has been elected a director of General Foods Corp., succeeding the late Walter P. Chrysler.

N. Ross MacCallum has been made vice-president in charge of sales of Federated Textiles, Inc., New York.

Louis F. Fayan has been elected clerk and treasurer of Richard Borden Mfg. Co., Fall River, Mass. He succeeds **Vernon L. Faulkner,** who has taken up his new duties as treasurer of Continental Mills, Lewiston, Maine.

N. Lorne Creig, Dayville, Conn., has purchased the Davis & Brown Co.'s mill in East Killingly. The new owner plans extensive renovations and will operate as a woolen mill. Mr. Creig was formerly associated with the Assawaga Co.

Basil Browder, former manager of the bleaching and finishing departments of Riverside & Dan River Cotton Mills, Danville, Va., has been made assistant to **George S. Harris,** president of the company. Mr. Browder started work in the general office of the company 21 years ago as stenographer.

Alan Sibley, Greenville, S. C., has been elected treasurer of Laurens (S. C.) Cotton Mills. He is treasurer of the Judson Mill, Greenville, and will divide his time between the two mills. **M. L. Smith** has been re-elected president of Laurens.

W. Shepherd Nicholson, Union, S. C., has been appointed receiver for Excelsior Mill of Union. The mill was established there 42 years ago. It manufactured narrow sheeting, and had been closed down since April 26, 1940. Until three years ago the mill also had a hosiery department.

Lewis A. Hird, treasurer of Samuel Hird & Sons, Inc., Passaic, N. J., was recently honored by Armando de Arruda Pereira of Sao Paulo, Brazil, president of Rotary International, by appointment as chairman of the Finance Committee of Rotary International and as chairman of the Rotary Relief Fund Committee.

Frank Digney of Catlin-Farish Co., New York, is chairman of a committee of part-wool blanket manufacturers to study the new Wool Labeling Law.

Frank F. Mountcastle, of the cotton gray goods division; **Milton W. Foster,** head of the domestics sheeting depart-

Scion of Textile Family Heads N. C. Association

WILLIAM HARRY ENTWISTLE was last month elected president of the North Carolina Cotton Manufacturers Association for the ensuing year. Rugged and determined, he accepted this responsibility, in the same spirit with which he shouldered the technical operation of his family's large textile interests several years ago.

Mr. Entwistle, the third generation of a pioneer textile family, had the good fortune to begin work under his grandfather, the late William Entwistle, who was a weaver in England before he migrated to Massachusetts during the last century. After spending some time in the North and at Graniteville, S. C., the elder Entwistle founded the Entwistle Mfg. Co., at Rockingham, N. C. For many years young William Harry worked as part of a team with both his grandfather and father, George P. Entwistle. The latter is now president and treasurer of the firm. This early training is reflected in young Entwistle's sound attitude toward industry problems.

Beginning work in 1916, he took time out for the World War during which he was a corporal and later a sergeant in the 324th Machine Gun outfit, seeing active duty in France. After the war he became assistant to the general manager of the Entwistle company, and in 1923 general manager and vice-president, which position he now holds, as well as that of president of Pee Dee Mfg. Co. Mr. Entwistle's hobby by his own admission is hunting and fishing, and in addition, his friends can testify, he has a fine voice for singing Irish ballads at conventions.

Give It Back TO THE *Indians!*

WE MEAN ordinary thin-boiling starches, of course. They've been outmoded by

AMYLEX

— the Original

SLOW CONGEALING STARCH PRODUCT

Made Expressly for Warp Sizing!

- The slow-congealing feature produces strong, smooth-surfaced warps, and eliminates crusting or lumping.
- Fats are either eliminated or greatly reduced—thus preventing flaking, excessive shedding, and loom breaks. Likewise, tensile strengh is increased. Size preparation is much quicker and simpler.
- Brighter, stronger colors are obtainable on dyed warps—owing to the transparency and uniform penetrating properties.

AMYLEX, being a thin-cooking starch, has the proper penetration, yet coats the fibres like an expensive gelatin or potato starch size. It is a pure form of modified starch, containing no chemicals nor fats, and is commercially uniform at all times. It is priced the same as standard thin boiling starches. Write us the amount you need for a trial. We will gladly send it on approval.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

Hit or miss methods of selecting soda ash, caustic soda, and other alkalies you require for textile operations have gone out of date.

Today, there are five important requirements to be considered when you place your order for an alkali . . .

QUALITY—Solvay Alkali quality is assured. The oldest and largest alkali producer . . . Solvay Alkalies have established the quality standards for alkalies for years.

FORM OF PRODUCT—Many Solvay Alkalies are produced in various forms to meet your specific requirements.

UNIFORMITY—No hit or miss methods here—Solvay Alkalies are always as specified!

DISTRIBUTION—Three huge Solvay Plants in important industrial centers and many stock points assure efficient and on time deliveries.

SERVICE—Do you have problems in alkalies? Solvay Technical and Engineering Service Division is maintained to help you.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

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Please send me a copy of the Solvay Products Book which will give me complete information on all Solvay Products.

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NEWS ABOUT MEN

ment; **George M. Elliott,** head of the flannel department; and **Norman S. Greenlaw,** manager of the men's and women's wear department, have been elected vice-presidents of Southeastern Cottons, Inc., New York.

Neil MacLellan, head of the yarn department of American Woolen Co., New York, has been made president of the Woolknit Associates, Inc., New York, succeeding **Albin O. Goetze.**

C. M. Vanstory, Jr., Greensboro, N. C., resigned as vice-president of the Security National Bank to become an executive of the Burlington Mills Corp., Greensboro.

Samuel A. Salvage, retired president of the American Viscose Corp., New York, has been elected an honorary member of the American Association of Textile Technologists.

Max Mahler is resigning as president of the Stone Mill Fabrics Corp., a subsidiary of the Kendall Co., in order to concentrate his efforts on the development of Mahler Textiles, Inc.

Gilbert W. Douglas has become president of Chipman Knitting Mills, Easton, Pa., succeeding the late John S. Chipman. Mr. Douglas will retain his presidency of Roman Stripe Mills, the New York firm which represents the Easton company.

James Oates, former assistant superintendent of Brookside Mills, Knoxville, Tenn., has been named general superintendent of Virginia Mills, Swepsonville, N. C.

Emil R. Pohlers, recently resigned from Joseph Bancroft & Sons as sales manager of that firm's Reading Cotton Mill, has joined the Exeter (N. H.) Mfg. Co. in its New York office as department head and stylist.

J. Taylor Fite, credit manager of George Wood Sons & Co., Philadelphia, is observing his 50th anniversary with the company. His associates presented him with a suitably engraved watch in recognition of the occasion.

Howard Veit, for 36 years active in the converting field and recently vice-president of M. Lowenstein & Sons, New York, will retire from active business at the end of the year and take up his residence at Pebble Beach, Calif. For many years Mr. Veit has been active in association work and on various trade committees. He is succeeded by **David Gottlieb,** previously vice-president of the Reliance Mfg. Co.

Iser Peter Cohen, formerly of Cohen Bros. Corp. and connected with the knitwear industry for over fifty years, has been made executive director of Associated Knitwear Contractors, Inc., New York.

Raymond Y. Bartlett has been appointed assistant sales manager of the women's wear division of Botany Worsted Mills, New York.

Sidney Davis, vice-president and director of the Worcester (Mass.) Knitting Co. since its inception in 1922 and lately general sales manager, has resigned that connection.

C. Hessey-White, sales manager, **Canadian Celanese** Ltd., Drummondville, Que., was recently appointed major in the Victoria Rifles of Canada, nonpermanent active militia. Major Hessey-White served with the regiment during the war of 1914-18.

Roger Wooley recently with Gosnold Mills, has become associated with the rayon department of McCampbell & Co., New York.

Oscar Frick, associated with Stehli & Co., New York, for the last 21 years, has resigned and will join J. P. Stevens & Co., where he will be associated with his brother **Robert Frick** in the fabric development department.

S. L. Lewis, Jr., has resigned from the organization of Howard E. Bishop, New York, to become a sales executive with Eagle & Phenix Mills and the Bradley Mfg. Co., Columbus, Ga.

Bernard Sobel, former dramatic critic and recently a theatrical publicity agent, has joined the publicity department of Celanese Corp. of America, New York.

Harris McLaughlin, for more than five years sales manager of Spool Cotton Co., New York and with the firm for 14 years, has resigned.

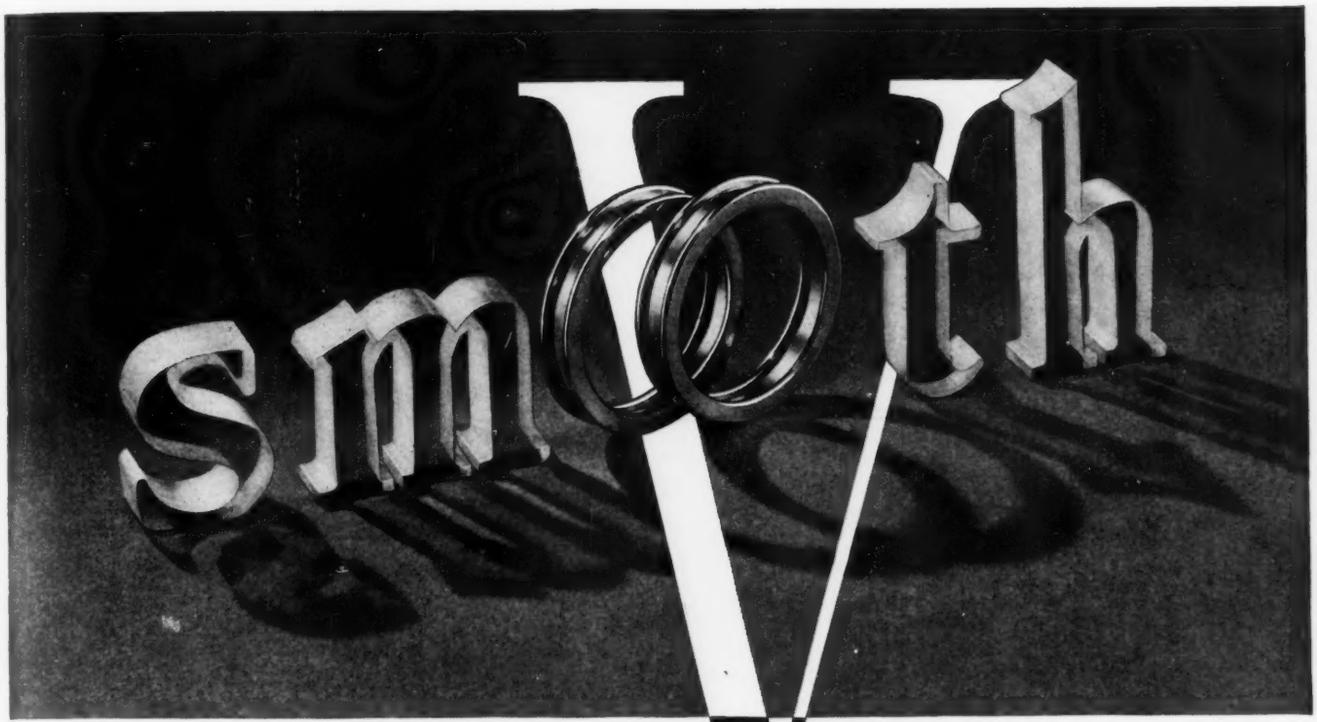
William T. Wood, works engineer of the Seaford, Del., plant of E. I. du Pont de Nemours & Co., has been appointed manager of Du Pont's Nylon plant at Martinsville, Va.

W. E. Gladding has been appointed manufacturing superintendent for the new Nylon unit of the E. I. du Pont de Nemours & Co., at Martinsville, Va. For the present he will have headquarters at Seaford, Del.

Milton Adler, advertising manager of the *Daily News Record* for the last eight years, has resigned to join the organization of the Worcester (Mass.) Knitting Co. in which he has acquired an interest.

Miss June Dickson, Raleigh, N. C., was the first girl to receive a bid for membership

. . . Give your travelers a "TURN FOR THE BETTER"



Pawtucket Rings fit the word smooth to a "T". They're designed for grueling high-speed performance. The low number of ends down . . . and longer traveler life reduce both operating and maintenance costs.

The Vitritex Finish on these rings preserves the full thickness of the outer case . . . it is not merely a veneered polished surface. The very application of this finish hermetically seals the surface against the destructive and corrosive effects of moisture and gases. Production, too, can be started at normal speed — for no slow-running, breaking-in period is necessary or required.

Vitritex finish

Here we have given the briefest facts about these improved rings. Our engineering staff would like to give you more details . . . and show you how these rings can *increase* your *production, reduce maintenance costs* and give your travelers a *"TURN FOR THE BETTER."*

PAWTUCKET SPINNING RING COMPANY

(SUBSIDIARY OF SACO LOWELL SHOPS)

CENTRAL FALLS · RHODE ISLAND

He's a Critical Buyer!

Processing fabric to Government specifications or for any discriminating buyer calls for close figuring and peak efficiency. . . . Rejection of only a fraction of the contract can wipe out your anticipated profit. So why take chances on a water supply that may be hampering the men whose jobs depend on producing materials which get 100% acceptance?

HUNGERFORD & TERRY
WATER PURIFICATION SYSTEMS

produce clear, 100% soft, iron-free water at a cost of only a few cents per thousand gallons . . . Water that assures uniform finish, better hand, brighter colors, closer dye matching, whiter whites and holds waste down to the minimum.

To determine whether or not your water supply is causing you trouble and expense we will make an impartial survey without fee or obligation. If a purification plant is indicated our estimate of your requirements will be included in the survey. No "sales pressure" is included in H. & T. engineering service. Write us today.

HUNGERFORD & TERRY, INC.
WATER PURIFICATION PLANTS DESIGNED
INSTALLED *and* GUARANTEED
CLAYTON, NEW JERSEY

in the N. C. State College chapter of Sigma Tau Sigma, honorary textile fraternity, on Oct. 19. Membership in this fraternity is limited to students completing three years of work in the textile school with an average of 80 and above for the entire period. Other students receiving bids were **John Boger,** Concord, N. C.; **T. R. Brown,** Cramerton, N. C.; **Richard S. Densberger,** Kenmore, N. Y., and **Robert S. Handley,** Llanerch, Pa.

Francis J. Moeckel, formerly vice-president of Gotham Silk Hosiery Co., has become sales promotion and advertising manager of George D. Wetherill & Co., Philadelphia, paint and wax manufacturers.

Reed Anthony, recently with Spool Cotton Co., has joined American Viscose Corp., and will be associated with that company's Charlotte, N. C., office.

Emanuel Tabb, for the last six years with Stunzi Silk Co., New York, has resigned to go into business on his own account.

Miss Ada Kay Price has joined the organization of Cohn-Hall-Marx Co., New York, as color consultant of its Uptown Plain and Novelty Fabric Department.

S. L. Diggle, Jr., Charlotte, N. C., southern representative of C. A. Auffmordt & Co., factors, New York, has reported at Charleston, S. C., to join the naval forces as radio instructor. Mr. Diggle has had eight years experience in this line at Naval Station in Charlotte.

Frank H. Coker, Charlotte, N. C., since 1929 district sales manager for rayon department of E. I. du Pont de Nemours & Co., has been transferred to the company's office at Wilmington, Del., as manager of rayon staple sales in the United States. **F. F. Hubach,** from New York office, will succeed him at Charlotte.

Fred Graichen, designer at Puritan Mills of American Woolen Co., Plymouth, Mass., for a number of years, has been transferred to the Fulton (N. Y.) Mills of the same company where he will become designer-in-chief. Mr. Graichen was recently elected president of the National Association of Woolen & Worsted Overseers.

Glen Hitchcock of Hudson, N. Y., was elected president of the New York State Textile Overseers Association at the annual meeting Oct. 25 at Hotel Wellington, Albany, N. Y. **Robert Whalen** of Ballston Spa, is vice-president; **Oswald Decker** is second vice-president; **Elwood Ward** is third vice-president.

Marion T. Grimes, formerly of Gainesville, Ga., who spent the last 18 months at Medellin, Colombia, South America, where he was associated with the Cia de Tejidosde Rossellon, has returned to Gainesville. He will be purchasing agent in the United States for this company.

Ezra McEwen, former agent of Wyandotte Worsted Mill at Pittsfield, Mass., has been named agent of the mill at Rochester, N. H., succeeding his brother, **Arthur C. McEwen,** who has been transferred to Waterville, Me., as agent there.

Frank O'Neil, formerly sales manager of the Faultless Pajama Co., has been appointed sales manager of the cravat division of Cheney Bros., South Manchester, Conn.

Stanley Black, formerly with the Gayle unit of Springs Cotton Mills, Chester, S. C., has accepted a position with Pacific Mills, Hampton Division, Columbia, S. C. He was previously assistant division manager of the Thrift unit of Kendall Co., Paw Creek.

H. W. Pittman, personnel director for Bibb Mfg. Co., has been transferred to Porterdale as agent for the company, succeeding **J. O. Porter.** Mr. Pittman has been connected with Bibb for the last 22 years, serving as general superintendent, factory manager, personnel director and superintendent of schools.

Morton H. Baker has been transferred from the Holyoke (Mass.) division of American Thread Co. to Willimantic, Conn., where he will have charge of the testing and thread finish research unit of the American Thread Co.

Fred Lane, formerly with Assabet Mills of American Woolen Co., Maynard, Mass., has been named superintendent of the Millbury (Mass.) Woolen Co., succeeding **Baylis G. Aldrich,** who becomes superintendent of Schuster Woolen Co., East Douglas, Mass.

T. M. Burks, formerly with the Birmingham, Ala., plant of Avondale Mills, has accepted a position as second-shift foreman of carding at the Eva Jane plant, Sylacauga, Ala.

Robert Gofton is now head of the dyeing and finishing department of Midland (Ontario) Woolen Mills. He was formerly with the Slingsby Mfg. Co. Ltd., Brantford, Ont.

Heman B. Hunter has been appointed assistant overseer of weaving for Naumkeag Steam Cotton Co., Salem, Mass. He is a native of Bristol, Me.

C. W. Wilbanks, Chester,

Custom tailored for caustic

On the outside, it looks like just another tank car. On the outside, it *is* just another tank car. Externally, there is only one thing to tell you that this is a special car, one of a large fleet that is unlike any other fleet in the chemical industry . . . the name *Michigan Alkali*.

Michigan Alkali tank cars are the most modern in service today. Having the heaviest insulation in use, and lined with our own caustic-proof lining, they make possible the highest loading temperatures. This means that all Michigan Alkali shipments, both 50% and 74%, are *liquid* when they reach you. It means, too, that there is no metallic contamination en route, and that weather conditions have no effect on the contents.

From the standpoint of transportation, this is important. Even more important is the fact that Michigan Alkali liquid caustic soda is fitted exactly to your requirements, because Michigan Alkali produces the widest range of caustic types available. Traditional Michigan Alkali quality and uniformity are maintained by close chemical and spectrographic control, and all shipments are guaranteed.

WYANDOTTE CAUSTIC SODA

For your further information about the properties, methods of handling and uses of caustic soda, Michigan Alkali has prepared a new fifty-six-page booklet which can be used as a complete and authoritative manual and book of reference. A copy will be sent you free of charge. Write to Michigan Alkali Company, 60 East 42nd Street, New York City.

50th ANNIVERSARY 1940

MICHIGAN ALKALI COMPANY

Works: **Wyandotte, Michigan** ***General Sales Office:*** **60 E. 42nd St., New York City**

MANUFACTURERS OF SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CHLORIDE • DRY ICE
LIQUID CHLORINE • CALCIUM CARBONATE • COKE • CEMENT • TAR • TOLUOL • BENZOL • XYLOL • CALCIUM HYPOCHLORITE

GETTING THE MOST FROM HUMIDIFICATION

RIHCO Type B Atomizer

In its ability to create a new low cost in atomizer humidification, the new RIHCO Type B has already proved its worth in many leading mills. Maintaining any required and constant humidity condition throughout each department, the Type B obtains these results with smaller initial equipment and with far less cost for power to operate.

Let a RIHCO engineer tell you why the RIHCO Type B can do this and what it is saving in so many mills.

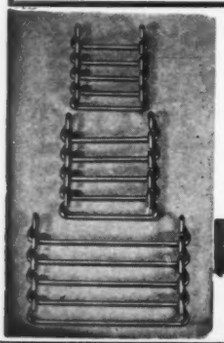
R. I. HUMIDIFIER & VENT. CO.

Humidifiers since 1912

99 Chauncy St., Boston, Mass.

Aldrich Machine Works, Greenwood, S. C. — V. L. Sanderson, 1710 Walnut St., Philadelphia, Pa.

OPPORTUNITIES TO IMPROVE YOUR PRODUCT AND SAVE YOUR MONEY . . .



NARROWING CHAIN

Accurately made from high grade material—built to last and to hold its shape.

SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

Send for bulletin giving full details on these and other products.

THE SINKER WITH THE HARDENED THROAT (PATENTED) AND THE HARD BUTT

GIVES YOU..

ESS BREAKAGE
ONGER SERVICE
OWER OPERATING COST
ONGER UNIFORMITY OF PRODUCT

THOMAS & SKINNER STEEL PRODUCTS COMPANY

1119 East 23rd Street — Indianapolis, Indiana

NEWS ABOUT MEN

S. C., has resigned as superintendent of the Gale Plant of Springs Cotton Mills.

D. D. Quillian has accepted a position with Aldora Mills, Barnesville, Ga., as superintendent. He was formerly with Athens (Ga.) Mfg. Co.

P. E. Smith, formerly of Leaksville, N. C., identified with the finishing department of the Marshall Field Corp., has been appointed superintendent of finishing and bleaching of Riverside & Dan River Mills, Danville, Va. He takes the place of **Basil Browder,** who recently was named assistant to the president.

W. L. Stoner has resigned his position with Graniteville Co., Warren unit, Warrenville, S. C., and is now overseer of spinning at Pilot Mills, Raleigh, N. C.

Andrew Potts has resigned as overseer of cloth room of Corsicana (Tex.) Cotton Mills, and has accepted a similar position with Dallas (Tex.) Cotton Mills.

J. G. Chapman has become production superintendent of Eagle & Phenix Mills, Columbus, Ga. He was formerly manager of Samoset Mills, Talladega, Ala.

P. J. Guinn has become overseer of weaving at Flint River Cotton Mills, Albany, Ga.

H. W. Winnett, has relinquished his duties with Avondale Mills, Sylacauga, Ala., and has become master mechanic at Sanford (N. C.) Cotton Mills.

Lee Sens has become superintendent of Glen Raven Cotton Mills, No. 2 unit, Kinston, N. C.

H. C. Yates has become master mechanic at Dallas (Tex.) Cotton Mills.

B. C. Huneycutt has accepted position of night superintendent of Sanford (N. C.) Cotton Mills.

Edmond Davignon, assistant superintendent of the Sherbrooke, Que., branch of Dominion Textile Co., Ltd., was recently promoted to superintendent of the St. Anna Branch in Montreal.

K. M. Yow is now night overseer of weaving and slashing at the Sanford (N. C.) Cotton Mills, having been promoted to this position.

Fred LaFay, who has been card room overseer at Gonic Mfg. Co., Rochester, N. H., has accepted a similar position in Vermont.

Donald Heggie, until recently with the laboratory division of Consolidated Dyestuff Corp., has been named head dyer of St. George Woolen Mills, St. George de Beauce, Que.

W. M. Langley has resigned as superintendent of Abbeville (S. C.) Cotton Mills and become superintendent of the Warren unit of Graniteville (S. C.) Co.

H. A. Poovey has been overseer of the finishing department of the Elliott Knitting Mills, Hickory, N. C., for 34 years. On his 54th birthday, Nov. 7, the employees of his department honored him with a dinner.

James Barret, until recently with Cosmos Imperial Mills Ltd., Hamilton, is now yarn superintendent with Stauffer-Dobbie Ltd., Galt, Ont.

C. E. Elrod has resigned his position with Texas Textile Mills, Dallas, Tex., to return to a former position as overseer of the weave room of Dallas Cotton Mills.

J. C. Pirkle has become superintendent of the No. 2 unit of Pee Dee Mfg. Co., Rockingham, N. C. He was formerly superintendent of Faytex Mills, Fayetteville, N. C.

Marvin Hewitt is now overseer of carding at the Warren unit of Graniteville Co., Warrenville, S. C., having been promoted to this position.

A. E. Dyson, formerly with the Sanford (N. C.) Mills, is now superintendent of Dallas (Tex.) Cotton Mills. He had been overseer of the cloth room of the same mills until his promotion.

L. Tipton has resigned his position with the Jefferson (Ga.) Mills, No. 2 unit, to become overseer of carding and spinning at Sanford (N. C.) Cotton Mills.

Max Higgins has resigned as overseer of spinning at Pilot Mills, Raleigh, N. C., to accept a similar position with Harriett Cotton Mills, Henderson, N. C.

R. D. Gazaway, formerly with Drayton (S. C.) Mills, is now overseer of the first shift weaving and slashing at Sanford (N. C.) Cotton Mills.

John S. Turner, superintendent of the Osprey unit of Bibb Mfg. Co., Porterdale, Ga., has been appointed general superintendent of all of the units of this company at Porterdale, in addition to his present duties with the Osprey unit.

B. D. Cain has been appointed superintendent of the Osprey unit of Bibb Mfg. Co., Porterdale, Ga.

5 Lixate installations in 5 plants in 5 years

by Allied Textile Printers, Inc.

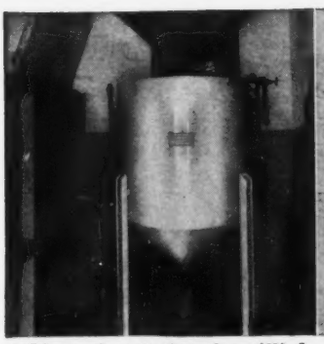
ILLUSTRATED on this page are the five Lixate installations made during the past five years by one of America's leading textile printing companies. These five installations supply Lixate Brine for discharge dyeing and for regenerating zeolite water softeners, in no less than six different divisions of this company's wide-spread business.

This is an outstanding example of one of the most convincing endorsements of The Lixate Process by many industries. That is the way in which the original Lixate installation in one plant, leads to more installations in other plants or divisions under the same management—and even additional installations in the original plant for other uses.

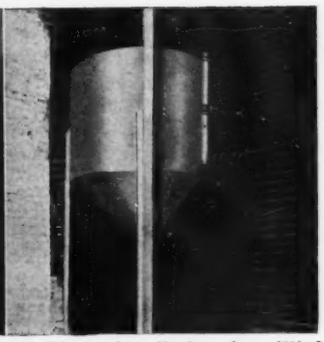
In the textile industry, Lixate Brine helps to improve quality by more level dyeing—guards against streaks, spots and whitened edges. It is a great convenience, as it eliminates all the fuss and nuisance of trucking or carrying bags and boxes of salt, or tanks and barrels of brine through the mill. It speeds up wet processing operations. Yet all of these advantages are gained with 4 major savings in operating costs:

1. Lower labor cost for handling salt.
2. No labor or power cost for making brine or mixing a saline exhausting agent in the dye bath.
3. Reduced mill distribution costs, as brine can be piped to points of use eliminating the cost of distributing solutions or salts by hand through the mill.
4. Savings of 10% to 20% in amount of salt required.

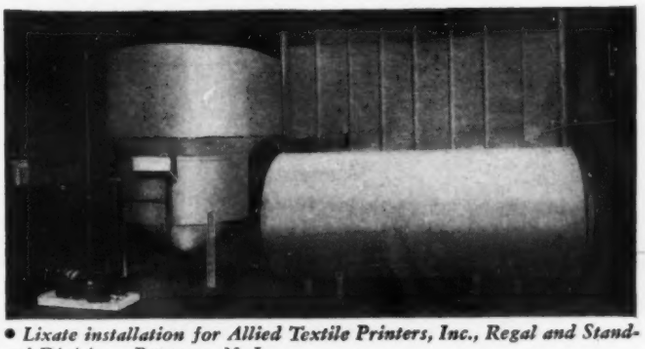
All of these advantages are due to the automatic production of a fully saturated, crystal clear brine, from International's Rock Salt. The brine produced is bacteriologically clean, and chemically pure far beyond the pure food requirements. For a detailed explanation of the Lixate operation, write for a copy of The Lixate Book, which contains pictures of many installations, and detailed data about the properties of salt brine.



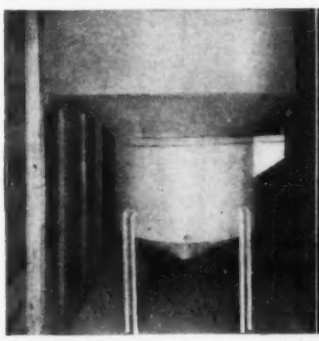
• *Lixate installation for Allied Textile Printers, Inc., Perennial Division, West Warwick, R. I.*



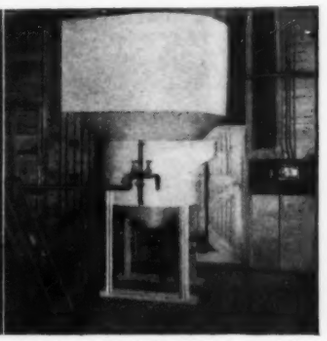
• *Lixate installation for Allied Textile Printers, Inc., International Division, Paterson, N. J.*



• *Lixate installation for Allied Textile Printers, Inc., Regal and Standard Divisions, Paterson, N. J.*



• *Lixate installation for Allied Textile Printers, Inc., Printex Division, Paterson, N. J.*



• *Lixate installation for Allied Textile Printers, Inc., Opal Division, Haledon, N. J.*

• SALT FOR EVERY PURPOSE

International Salt Company, Incorporated, developed The Lixate Process in order to help industry use salt better and for greater profit. International produces all types and grades of salt for every industrial use, including all grades of granulated salt (vacuum evaporated); flake salt (grainer evaporated); and Rock Salt. The advice and counsel of The Research Department of International Salt Company, Incorporated, is offered freely and without obligation to all industrial users of salt or salt brine.

• WRITE FOR THIS BOOK

The Lixate Book will be sent free on request. It not only describes The Lixate Process and illustrates many installations, but it also gives valuable information about salt brine. The International Brine Table alone would make this book a worth while addition to the technical library of any textile executive.

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NEWS ABOUT MEN

Carl Johnston has resigned his position with Dunean Mills, Greenville, S. C., and has become overseer of spinning at Victor-Monaghan Co., also Greenville.

E. A. Safie has become superintendent of Bradford Mills, Prattville, Ala. He was formerly of Safie Hnos & Co., San Salvador, Central America.

J. H. Canady, overseer of carding at Pell City, Ala., unit of Avondale Mills, has been made overseer of spinning in addition to his present job.

Obituary

Clare H. Draper, 64, retired vice-president and director of the Draper Corp., Hopedale, Mass., and an outstanding inventor in the textile industry, died at his home in Boston on Nov. 27. He was born in Hopedale and was graduated from Yale College in 1900. His career with the Draper company began in Hopedale, and later he founded the C. F. Roper Co. and the Hopedale Mfg. Co. The latter was ultimately consolidated with the Draper Corp.

CLARE H. DRAPER

Dr. Alfred Schwarzenbach, 65, president of Schwarzenbach Huber Co., New York, died Nov. 17 at his estate in Switzerland. He was a native of Zurich, but visited this country regularly since 1908. He had numerous financial interests in Switzerland.

Joseph Gerli, 75, president of E. Gerli & Co., New York, died Nov. 22. He was a member of the board of the International Silk Guild and a director of Julius Kayser & Co. He was affectionately known in the silk industry as "Uncle Joseph". Born in Italy, he came to the United States in 1894.

Ferdinand Klumpp, 65, of Kaylooms, Inc., Weehawken, N. J., died last month. Born in Germany, he had worked in the textile industry of this country since 1895. He established Hansco Dyeing Co., but from 1921 had devoted his entire attention to developing a new fine-goods loom of his own invention.

FERDINAND KLUMPP

Ralph E. Northway, 71, mechanical engineer with Saco-Lowell Shops, Saco, Me., for the last seven years, and a pioneer automobile maker, died Dec. 5.

Franklin B. Fuld, 57, treasurer of Fuld & Hatch Knitting Co., Cohoes, N. Y., died Nov. 29.

Ernest M. Torbet, 49, general manager of Propper-McCallum Hosiery Co., Northampton, Mass., died Dec. 2. He had served the company and its predecessors for 32 years.

Reinhold H. Forstmann, 38, sales manager of the Julius Forstmann Corp., the selling agency of the Forstmann Woolen Co., Passaic, N. J., of which he was also an officer, died Nov. 9. He was born in Germany in 1903 and came to America as a child with his father, Julius Forstmann, who established the business in Passaic first known as the Forstmann & Huffman Co.

Clarence A. Parker, 53, treasurer of Parker Spool & Bobbin Co., is dead in Lewiston, Me.

Henry C. Wall, 58, former president of the Roberdel Mfg. Co., Rockingham, N. C., died on Oct. 27.

Frank H. Poehler, president of Prairie du Chien (Wis.) Woolen Mills, died Nov. 7. He was a former mayor of Prairie du Chien.

Charles A. Bartlett, 76, who retired as treasurer of the Graton & Knight Co., Worces-

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COTTON is a versatile textile fiber. From the cotton boll, countless fabrics ranging from dainty dress materials to rugged industrial fabrics are woven. Sheer summer fabrics for dresses, luxurious towels for the home, durable canvas for tents are only a few of the varied potential uses of this fiber. Logical enough, the sobriquet, King Cotton.

RHOPLEX RESINS are even more versatile as textile finishing agents. They add strength, hand, and life not only to cotton, but also to rayon, silk, linen, and other fabrics. RHOPLEX RESINS are clear, odorless, and durable; they are free from the difficulties encountered with ordinary resin finishes. In finishing fabrics—it's King RHOPLEX.

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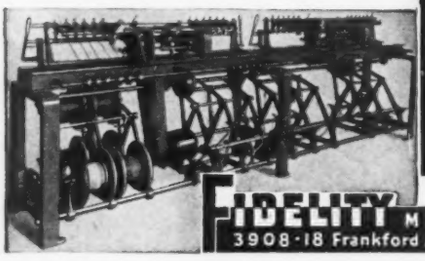

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NEWS ABOUT MEN

ter,, Mass., in 1935 after over 46 years' service with the organization, died Nov. 10.

Dana H. Alexander, 42, widely known salesman who for several years represented Clinton Sales Co. in South Carolina, died late last month at his home in Greenville, S. C.

Norman C. Small, 43, treasurer of the Small Bros. Mfg. Co., Fall River, Mass., died in that city on Oct. 28. He was a vice-president of the Fall River Trust Co.

Arthur C. Port, [illegible], vice-president and sales manager of P. H. Hanes Knitting Co., Winston-Salem, N. C., died Nov. 20. He had been with the firm for over 15 years.

Arthur M. Lamport, 56, senior partner in the investment banking firm of A. M. Lamport & Co., New York, died Nov. 9. He was a brother of Samuel C. Lamport head of the Lamport Mfg. Supply Co. which he helped to organize in 1905. A. M. Lamport retired from the textile business in 1921.

Tracy H. Durnell, 71, for the last ten years with Rosemary, Inc., died in Philadelphia last month. He had been with the old Hamilton Woolen Co. and Amoskeag Manufacturing Company.

William B. Thomas, 56, president of Mutual Fabric Co., Binghamton, N. Y., died Nov. 18.

Percival de St. Aubin, 53, treasurer of Vesta Underwear Co., and formerly Rhode Island State treasurer, died Nov. 1 at Providence, R. I.

C. C. Robbins, president of the Robbins Knitting Co., Spruce Pine, N. C. died Nov. 26. He established the firm in 1921.

Edward J. Meagher, 47, salesman for Pacific Mills for the last 18 years, and previously with Lawrence & Co., New York, died Nov. 13.

William August Mauer, 82, former general manager of the Germania Mills, Holyoke, Mass., when the firm ceased operation in 1934, died Nov. 13. He was born in Germany and came to America in 1881 going to work in the Germania Mills.

K. N. Purvine, overseer of dyeing of Atlanta (Ga.) Woolen Mills and with that firm for 40 years, died Nov. 14.

Henry C. Forrest, 57, president of Forrest, Inc., Philadelphia, Pa. mercerizers, died Nov. 6. Mr. Forrest had been in the yarn business for many years.

DANA H. ALEXANDER

E. M. Lindgren, 71, secretary-treasurer of Carbic Color & Chemical Co., New York, died Nov. 7. He had been with the firm 51 years.

Robert I. Lachlan, 57, general manager of James Wilson & Sons, Philadelphia, died Nov. 16.

John W. Coggins, 38, superintendent of Adams-Millis Corp., High Point, N. C., died recently.

Zebulon H. Mangum, 63, retired general superintendent of Avondale Mills and a former resident of Birmingham, Ala., died recently in Auburndale, Fla., where he had lived for the last five years.

Lewis Y. Smith, Sr., 63, member of the firm of the former Isaac W. Smith Woolen Co., Bridgeport, Pa., died at Norristown, Pa. as the result of an automobile accident.

Lloyd Long, 43, overseer of a department of the Armstrong unit of the Gastonia (N.C.) Combed Yarn Corp., was drowned Nov. 17, when a boat in which he was riding in Catawba River, overturned.

James Flood, 82, retired overseer at Pepperell Mfg. Co., which he served for 54 years, is dead in Biddeford, Me.

William F. Alger, who served as overseer in the No. 12 Mill of the old Amoskeag Co., Manchester, N. H., is dead.

James A. Hill, 60, Greensboro, N. C., for the last 25 years loom fixer with Revolution Cotton Mills, died Oct. 27.

Albert Cecil Elgar, 49, overseer at Greenfield Carpet Co., Hillsborough, N. H., and formerly an overseer at Contoocook Hosiery Mills, is dead.

Henry T. Ewing, 65, foreman of weaving at Fort Dummer Mills, branch of Berkshire Fine Spinning Associates, Brattleboro, Vt., died Nov. 7.

Ralph Black, 48, secretary of Joseph Black & Son Co., York, Pa., died Nov. 12.

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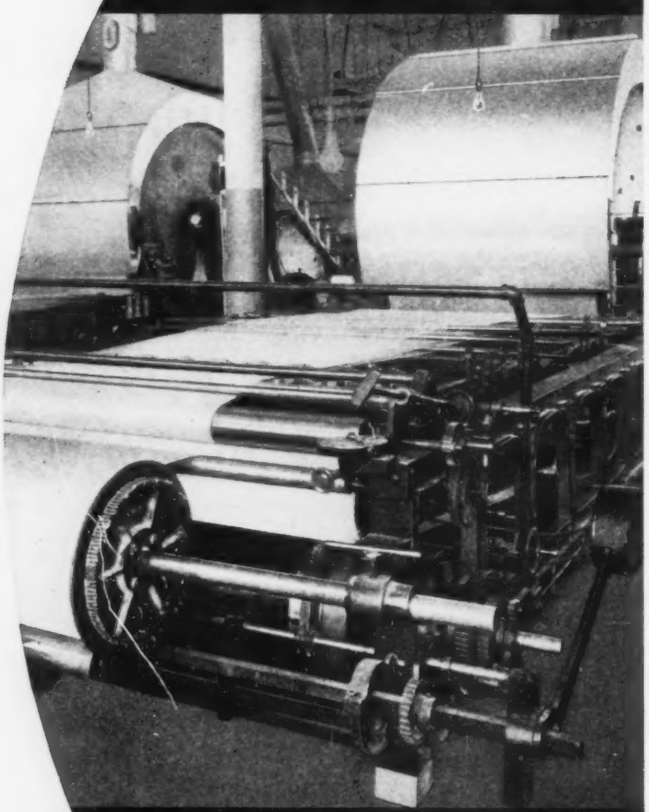

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TEXTILE MILL NEWS

Cotton Mill News

Alberton (Md.) **Cotton Mills** together with 118 company houses, grocery store, etc., has been sold at auction for $65,000 to C. R. Daniels, Inc., New York, which firm has been operating the plant under lease.

American Lace Mfg. Co., Elyria, Ohio, has been bought by J. Levi, S. Skutch and J. Goodstadt who plan to expand plants facilities which at present include 31 lever machines.

Athens (Ga.) **Cotton Mills** have awarded general contract to John K. Davis & Son, Athens, for one-story addition, 400 x 500 ft., to be used as a warehouse. Cost reported over $125,000, with equipment

Avondale Mills of Alabama have installed fluorescent lighting in the dobby room of their Eva Jane plant, Sylacauga, Ala. The new system is made by Wheeler Reflector Co.

Berkshire Fine Spinning Associates, Inc., have purchased the mill building at 17 Grove Street, Adams, Mass., operated for a number of years by Adams Bros. Mfg. Co. The mill was used for cotton warps. Berkshire plans to use it for storage purposes. Berkshire reports net profit for fiscal year ended Sept. 30 of $592,454 compared with $284,377 for previous year.

Bibb Mfg. Co., Macon, Ga., has completed installation of a number of wide looms of latest type, with auxiliary equipment, for manufacture of wide sheetings. The company reports net profit for year ended Aug. 31 of $2,073,109, compared with net profit of $1,096,071 for previous year.

Caromount Mills, Inc., Rocky Mount, N. C., have awarded general contract to J. D. Rose & Son, Rocky Mount, for one and multi-story addition to mill, to be equipped for a dyeing and finishing department. Cost reported over $400,000 with equipment. J. E. Sirrine & Co., Greenville, S. C., are architects and engineers.

Esmond Mills Ltd., Granby, Que., plans a new raw stock dye house to cost $35,000. It will contain two Klauder-Weldon dyeing machines, a Hunter raw-stock dryer, and a 7,600 gal. pressure tank.

Falls Mfg. Co., Granite Falls, N. C., has completed an addition to unit No. 2, and the work on the machinery changes has been about completed, including the installation of the Jackson Moistening Co.'s atomizer humidifying system.

Faytex Cotton Mills, Fayetteville, N. C., which went into bankruptcy in 1939, were sold to W. R. McElroy, of New York, for $100,000, Nov. 16. Mr. McElroy has been serving as co-trustee of the company. He plans to put the mills back into operation within the next three months. McElroy Mills, Inc., is the name of the new company.

Firestone Cotton Mills, New Bedford, Mass., is installing equipment costing more than $250,000, including spoolers and heavy twisters. The plant is operating at capacity, with more than 1,200 workers.

Grahamton (Ky.) **Mfg. Co.,** operated by McCord Co., of Louisville, Ky., has been condemned by the U. S. War Dept. as the property is needed for enlargement of Fort Knox. The McCord Co. will have yarn spun by other mills until decision is reached regarding another plant.

Hartford (Conn.) **Spinning Co.,** recently organized with capital of $25,000, has taken over property at Farmington, Conn., and plans operation of mill at 98 Main St. Irving Nash, West Hartford, Conn., is president; and Harry D. Vanderbilt, vice-president.

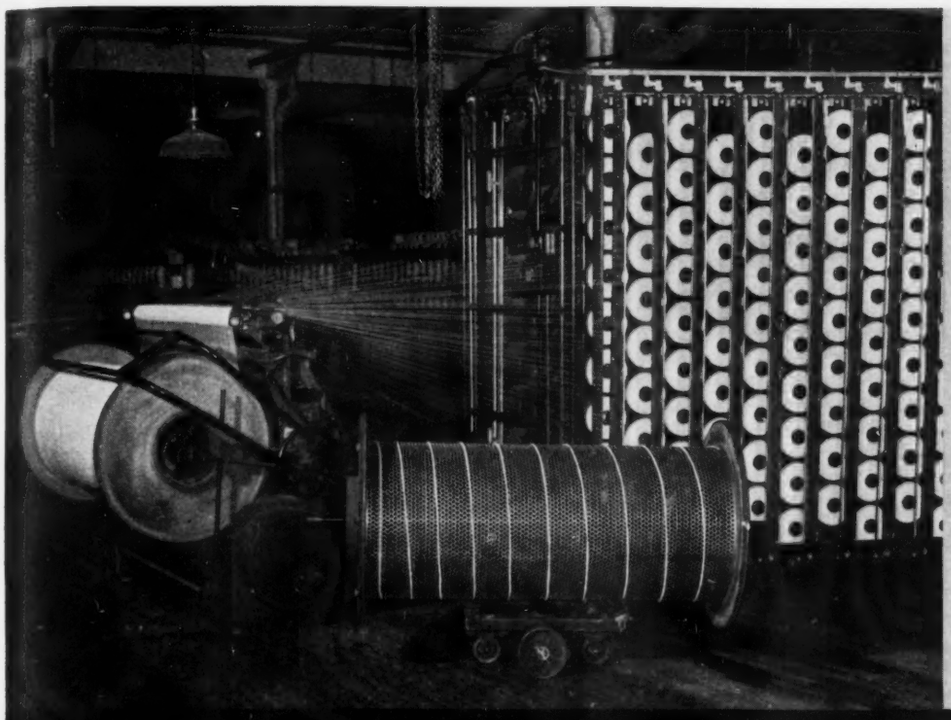
Hathaway Mfg. Corp., New Bedford, Mass., spent $628,527 on new machinery during the last fiscal year. In the last eight years new equipment totaling $2,027,000 has been installed. Net gain of $245,984 was reported for fiscal year ended Sept. 28, compared with $229,981 for previous year.

Hawkinsville (Ga.) **Cotton Mills** are consolidating their Fall River, Mass., unit with the mill here. The mill hereafter will be known as **Superba Mills, Inc.,** with Fred R. Thomas as president and treasurer.

Nelson Cotton Mills Co., Lenoir, N. C., has underway an extensive improvement program which includes purchase of new machinery.

Ranlo Mfg. Co., Gastonia, N. C., has been purchased by Burlington Mills Corp.

Springs Cotton Mills, Fort Mill, S. C., are completing installation of equipment in new two-story addition to local unit No. 1, in course of construction for several months. The first floor has been provided with carding machines, and certain space allotted to research laboratory; the second floor will be given over to spinning and



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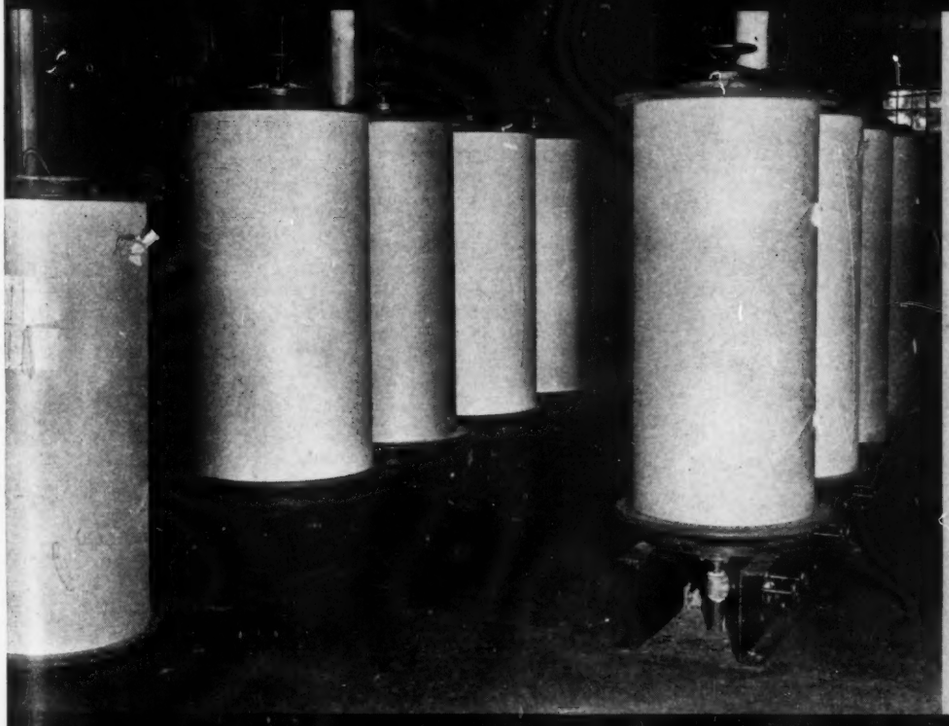

By using a special attachment on the standard Barber-Colman Super-Speed Warper, dye beams can be wound with accurately controlled UNIFORM DENSITY throughout the beam. This results in better, more uniform, more economical dyeing. The pictures show (above) a dye beam running and (below) a load of dyed beams on a drying rack.

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RINSES.. EASILY AND COMPLETELY
DRUMMOND SOAP

- Rinses easily and completely.
- Saves scouring time and steam costs . . . Improves fulling and scouring operations.
- Gives the softest feel and better handle.
- Makes colors brighter.

OTHER HIGH GRADE "STANDARD" PRODUCTS
Stanso Palm Oil Curd Soap, Etc. Etc. Etc.

Standard Soap co. of camden
1918 South Sixth St.
Camden, New Jersey
Charlotte, N. C., Cato M. Littleton, 426 Park Terrace.
Woonsocket, R. I., G. Tanguay, 281 Harris Ave.

Have you tried—
Booth
Quality
Card Clothing
Benjamin Booth Co.
Allegheny Ave. & Janney St. PHILADELPHIA

weaving. Company also plans 50 additional dwellings for operatives to be built as soon as the material can be assembled.

Standard-Coosa - Thatcher Co. has begun construction of an addition to its plant at Piedmont, Ala., to be two stories in height, 107 x 155 ft., and to cost $30,000.

Strickland Cotton Mills, Valdosta, Ga., have installed one 44-inch Hermas shearing machine.

Trion (Ga.) **Co.** has begun a modernization program which calls for new machinery, control and recording instruments as well as plant alterations.

Virginia Mills, Swepsonville, N. C., have begun a building program which will amount to $20,000. A warehouse and addition to the present mill will be constructed.

West Point Mfg. Co. reports for the fiscal year ended Aug. 31, a net profit of $2,387,532, compared with $923,082 the year previous. Plant additions for the year cost $899,999. Net sales were $22,502,469.58, or 28% over previous year.

York Wilson Mills, Red River, S. C., idle for some years, have been acquired by William M. Wilson, trustee, at a trustee's sale. Resumption of operations is under consideration.

Wool Mill News

Artloom Corp., Philadelphia has recently completely modernized its dye-house with "Tru-Shade" stainless steel dyeing machines purchased from the Rodney Hunt Machine Co., Orange, Mass.

Blackinton Mills, Inc., newly formed, is preparing to take over operation of the former Blackinton Woolen Co. plant at North Adams, Mass., according to John W. Lindsay.

Chatham Mfg. Co., Elkin, N. C., has begun one-story addition, for which general contract recently was let to F. L. Blum, Winston-Salem, N. C., to be equipped as a wool carbonizing and scouring unit. Cost about $75,000, with equipment.

Canada Felting Co., Ltd., St. Jacobs, Ont., has begun erection of a one-story addition, for which general contract recently was let to Dunker Construction Co., Ltd., Kitchener, Ont. Cost estimated over $45,000, with equipment. J. C. Khaehn, Kitchener, is architect.

Davis & Brown Co. woolen mill in East Killingly, Conn., closed for nearly four years, has been purchased by N. Lorne Creig of Dayville, who will restore it to operation. Mr. Crieg was formerly an official of the Assawaga Co. of Dayville, which closed several years ago.

A. D. Ellis & Sons, Inc., Monson, Mass., have begun erection of new two-story addition, 60 x 200 ft., and also will build a third story addition to present two-story mill unit, 60 x 60 ft. Cost estimated over $125,000, with equipment. General contract has been let to Adams & Ruxton Construction Co., Springfield, Mass. McClintock & Craig, Springfield, are engineers.

J. A. Humphrey & Son, Ltd., Moncton, N. B., recently installed a Franklin process raw stock dyeing machine as well as a Rodney Hunt fulling mill.

Holyoke (Mass.) **Worsted Co.,** newly organized, which took over the property of Holyoke Worsted Mills, started operations, Nov. 21. Donald R. Green is treasurer and Joseph Metcalf president. The concern will specialize in fine men's wear, with 56 looms in the plant on Main Street. Nestor & Kaufman, of New York, will be the sales agents.

Huntingdon Woolen Mills, Ltd., Huntingdon, Que., is constructing one-story plant additions, one containing 2,500 sq. ft. of floor space and the other 8,080 sq. ft., which provide added space for picker and weaving departments.

Jamestown (N. Y.) **Worsted Mills, Inc.,** have been incorporated to take over and operate the former company of same name, which discontinued operations at local mill a few months ago. New interests have purchased the property and plant will resume production. Company is headed by Wilson C. Price, president; E. Snell Hall, vice-president; and Earle O. Hultquist, treasurer.

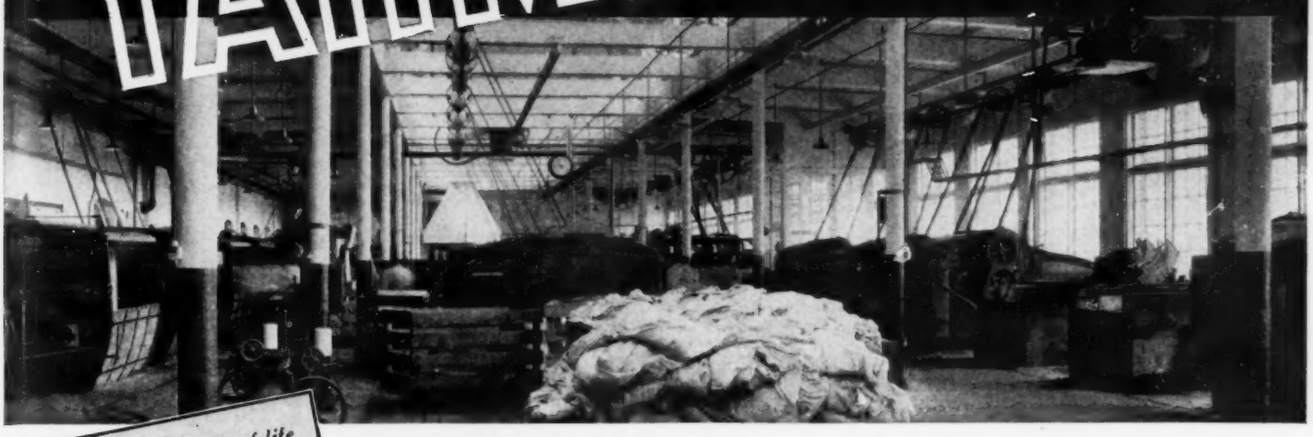
Kenwood Mills, Rensselaer, N. Y., have awarded general contract to Sheehan Construction Co., Albany, N. Y., for two-story addition, 50 x 122 ft., reported to cost about $90,000, with equipment. R. M. Rice, New York, N. Y., is architect.

Quaker Worsted Mills, Philadelphia, has moved to larger quarters at 718 Chestnut St.

St. Mary's (Ohio) **Woolen Mfg. Co., Inc.,** has filed notice of organization to operate in California with capital of $100,000, and headquarters at Los Angeles.

Wincheck Woolen Mills, Inc., Hope Valley, R. I.—W. E. Devine and J. L. Breen have been appointed permanent co-receivers with authority to operate the plant. It is hoped to prevent liquidation as the

YARMOR 302



Woolens that are full of life and have a rich appearance are certain when Yarmor 302 is used in fulling and scouring. And Yarmor also protects against rancidity during storage.

ACTS FAST AND SAVES MONEY IN FULLING AND SCOURING

Textile men everywhere hail Yarmor* 302, the triple-action assistant. It is a penetrant, a dispersant, and a detergent-assistant—and it's economical.

Yarmor gives quick fulling action because of fast distribution or penetration of the soap. Because of Yarmor's lubricating action, less flock accumulates in front of the fulling mill. Oils and greases in the cloth are emulsified, so that they are readily washed out.

In the washer, Yarmor's dispersing action holds in suspension any insoluble precipitates that may form, and prevents them from redepositing on the cloth. Yarmor's detergent-assistance means that the fulling soap will rinse easily, quickly, thoroughly. Thus, rancidity during storage is reduced, finishing operations are materially aided, and results of uniform quality are assured. Yarmor's triple-action help is always ready, always economical.

Likewise, in all wet-processing operations, Yarmor puts water to work. Highly efficient yet gentle in action, a little does a lot and does it well. Yarmor is easy to emulsify; is efficient and economical. Try a little of this triple-action assistant, and find out why you should use it—always.

Naval Stores Department

HERCULES POWDER COMPANY

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YARMOR 302 GIVES TRIPLE ACTION

WETS

DISPERSES

SUSPENDS FOR RINSING

PARAMOUNT Dual Heat Hosiery Finishing Machine

CREATING Incomparable Quality in Hosiery Finishing and Establishing Production Figures that are truly amazing, the Paramount Dual Heat Machine will revolutionize and simplify your hosiery drying and finishing methods.

Compare this Machine with your present equipment. You will find that it requires less square feet of floor space per dozen than any existing method of finishing; less steam consumption — heating is direct; less power — a one-quarter horsepower motor operates the entire machine; less investment per dozen — reasonably priced; less upkeep — built to render years of service; and production possibilities with quality work that cannot be challenged.

Machines will pay for themselves in direct savings to you.

WRITE FOR DESCRIPTIVE BOOKLET

Paramount Service With All Paramount Products

Paramount Textile Machinery Company

Main Sales Office

538 S. Wells St., Chicago, Ill.

company has a large order for blankets.

Blueridge Co., Inc., Glasgow, Va., is completing plans for one-story addition, to be used for warehouse. Cost is estimated over $80,000, with equipment. Award for foundations has been let to John P. Pettyjohn & Co., Lynchburg, Va., and contract for superstructure will be awarded soon. Ballinger Co., Philadelphia, Pa., is architect and engineer.

Wool Combing Corp. of Canada, Ltd., Acton, Ont., a new wool combing plant which expects to be in operation by the end of December, may establish a noil and wool carbonizing plant in Acton next year.

Rayon & Silk Mill News

Andover Weaving Corp., recently chartered in Andover, N. Y., has taken over the former Andover Silk Mill there and will begin operations.

Canadian Industries, Ltd., Montreal, Que., will begin its $1,500,000 plant for manufacture of Nylon yarn next spring. The plant will be near the city of Kingston, Ont. Plant at Brownsburg, Que., will be making monofilament for bristles, etc., next month.

Celanese Corp. of America reports net profit for first nine months of 1940 of $6,607,590 against $4,261,809 for similar period in 1939.

Dominion Textile Co., Ltd., will install a new 5,000-spindle spun-rayon plant in its branch mill at Sherbrooke, Que., in time for production before April, 1941. The fly-frame process which will be used in the plant will be supplied by Whitin and is of super-draft type with 126 spindles capable of long draft of fiber up to 3 inches in length. The spinning machine will be of the most modern type Whitin ring frames 2" ring, 140 spindles each, for producing warp yarns.

Weston Fenner & Bro., trading as the Belco Fabric Co., purchased the former Marion Silk Mill property in West St., Wind Gap, Pa. Machinery and equipment is being installed and operations are expected to start early in December. Seventy-five persons will be employed.

Hoffner Silk & Rayon Co., Philadelphia, Pa., has purchased the one-story dyeing and finishing plant of Aramingo Dyeing & Finishing Co., at Ontario, Belgrade and Miller Sts., and will use for expansion in operations.

Imperial Rayon Corp., Gloucester City, N. J., is reported planning removal of mill to a site now being selected in Maine. Production will be increased at new location.

Industrial Rayon Corp., Covington, Ky., and Cleveland and Painesville, Ohio, will redeem all of its first mortgage 4½% bonds, of which $7,100,000 worth are outstanding, on Dec. 27 at 105 plus interest.

Klots Throwing Co., Keyser, W. Va., has been sold to Harry P. Marshall for $15,250. Building formerly was used as a silk mill, but recently had been used as a W.P.A. zone warehouse.

Mexico City, Mexico—Reports are current that a $5,000,000 rayon yarn mill will be established by a group of Mexican rayon cloth manufacturers.

National Silk Spinning Co., New Bedford, Mass., has sold 200 modern silk looms to Gilt Edge Silk Mills. National Silk Spinning Co., formerly National Spun Silk Co., has been in process of liquidation for several months.

Pacific Mills, Lawrence, Mass., are discontinuing weaving operations for rayon fabrics at mills at Lawrence and Dover, N. H., and these divisions will be closed down at early date for an indefinite period. The change is stated as permanent.

Superior Silk Mills, Inc., Gloversville, N. Y., assessed for $30,000, have been sold for $15,000 at a foreclosure sale to the Trust Company of Fulton County.

Wyoming Weaving Co., West Wyoming, Pa., following an equity suit by Nicholas Konick, Max Goldberg and Alexander Roman, receivers, will have a $15,000 RFC mortgage foreclosed.

Knitting Mill News

Abbeville (Ala.) **Hosiery Mill** was completely destroyed by fire on Nov. 13. Plans have not yet been made public as to rebuilding.

Alta Hosiery Mills, Inc., Terra Alta, W. Va., has been granted a charter with the capitalization of $7,500. Incorporators are J. W. Watring, Frank B. Everhart and C. E. Trembly, all of Terra Alta.

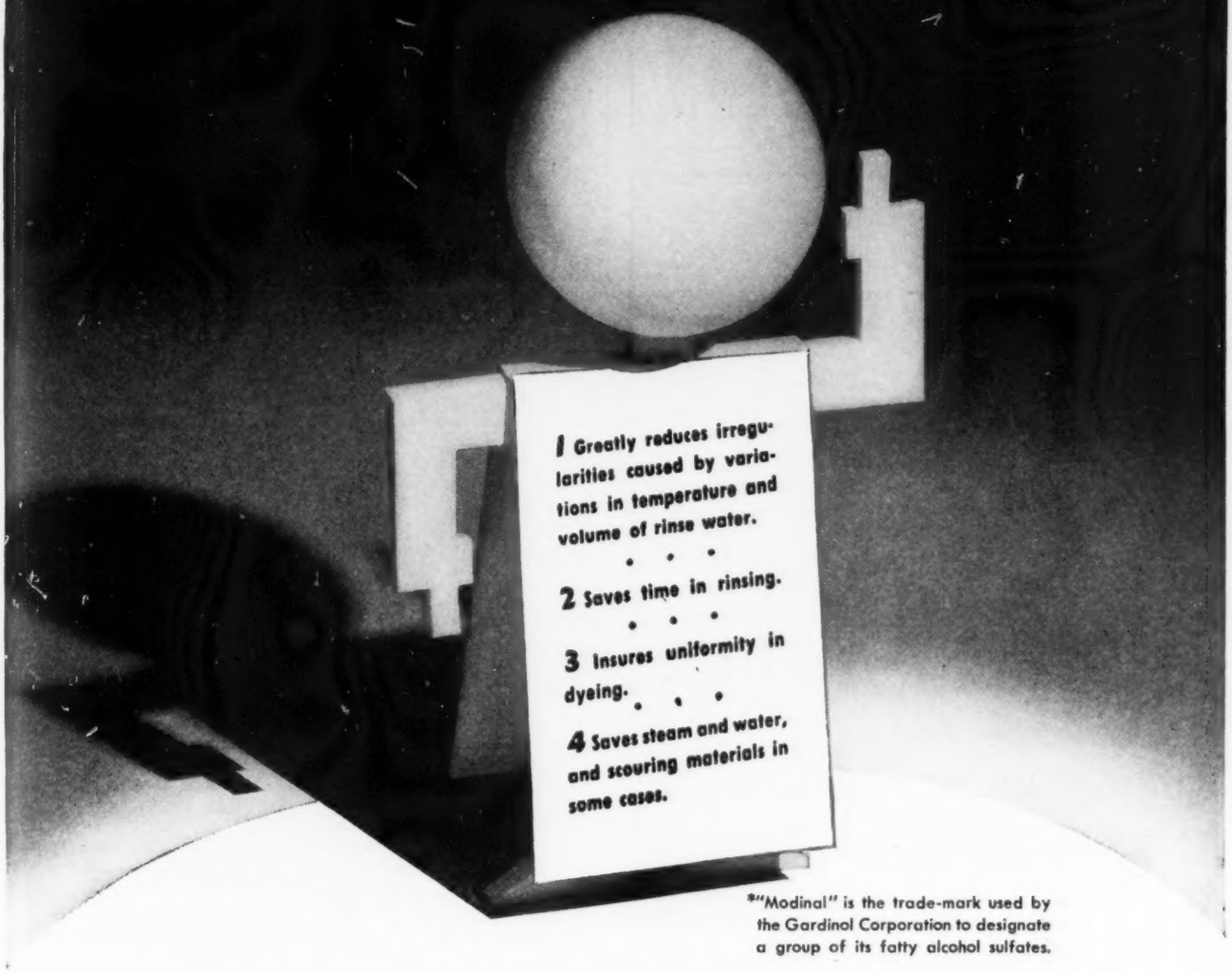
B-K Hosiery Mills, Inc., Laconia, N. H., recently organized with capital of $50,000, plans early operation of a local mill. Stewart Burns, superintendent of Sulloway Mills, Franklin, N. H., is vice-president; and Axel O. Karlberg, also with Sulloway, is president.

Bowling Green (Ky.) **Industrial Foundation** is spon-

For scouring piece goods after fulling

MODINAL* D

gives you these outstanding advantages...


1 Greatly reduces irregularities caused by variations in temperature and volume of rinse water.
2 Saves time in rinsing.
3 Insures uniformity in dyeing.
4 Saves steam and water, and scouring materials in some cases.

*"Modinal" is the trade-mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulfates.

MODINAL D brings you the advantages of modern synthetic detergents at new low costs. It is highly concentrated to enable you to save money on handling and use. Look into MODINAL D today. One of our experienced technical men will be glad to go over your processing requirements with you and show you where and how MODINAL D can do a better job for you! There is no obligation for technical assistance.

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STANDARD

G. W. LEWIN Straight WEAVERS' COMBS

Patent No. 172864

Highly polished brass backs. Hardened steel pins with hardened steel pick-out point of special steel which will not bend.

Style B80—Curved 80 fine pins
Style B60—Curved 60 coarse pins
Style B40—Curved 40 coarse pins
Style C80—Straight 80 fine pins
Style C60—Straight 60 coarse pins

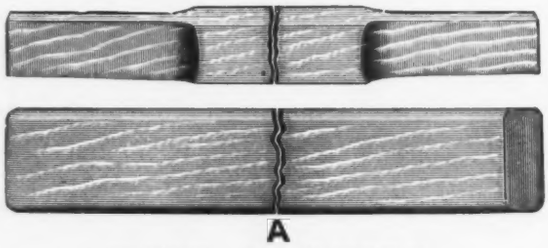
Price $2.00 Dozen—$20.00 Gross.

Manufactured by

STANDARD MILL SUPPLY COMPANY

1076 MAIN ST. PAWTUCKET, R. I.

Southern Standard Mill Supply Co., Charlotte, N. C.



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DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY Cedar Brook, N. J.

NOVELTY-YARNS

For

WEAVERS-KNITTERS

MONTGOMERY

WINDSOR LOCKS, CONN.

Designers and Spinners of Novelty Yarns

RALPH E. LOPER CO.

INDUSTRIAL ENGINEERS

Specializing in Textile Costs and Operating Methods for More Than a Quarter of a Century

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS
SPECIAL REPORTS

FALL RIVER, MASS. GREENVILLE, S. C.

soring a new knitting plant in the Derby Underwear Co. Bldg.

J. C. Brown, Villa Rica, Ga., will set up 39 knitting machines in the Camp Bldg.

Ellisville, Miss., is building a new hosiery mill financed by a $30,000 bond issue voted under the B.A.W.I. Act. The plant will begin operations within four months and has been leased to Don Smith of Philadelphia.

Holeproof Hosiery Co., Milwaukee, Wis., is moving 20 eight-ton hosiery-knitting machines from its Center St. plant to its plant at Fowler and 5th Sts., as part of a plan to consolidate certain departments for more efficient operations.

Knit-Sox Hosiery Mills, Hickory, N. C., has installed additional machines in its new building, increasing number from 95 to 133.

Kramer Brothers, New York, N. Y., hosiery distributors, will establish their own knitting mill and have leased space in building at Hunting Park Ave. and 16th St., Philadelphia, Pa., for this purpose, totaling about 30,000 sq. ft. New plant will be operated as the Trimfit Hosiery Mill. Equipment will be installed.

Laurentian Textile Co., Ltd., St. Jerome, Que., has purchased equipment from Knitted Fabrics Reg'd, Montreal, consisting of Leighton and Supreme knitting machines.

Longmeadow Mills, Inc., successor to the Harris Silk Hosiery Co., will reopen shortly. The St. Louis hosiery concern, of which the Longmeadow mill is a subsidiary, is in process of reorganization and change of management.

May Hosiery Mills, Burlington, N. C., have work under way on installation of new 51-gauge machines in their different units, which is a part of a program calling for the expenditure of several hundred thousand dollars.

Milco Undergarment Co., Bloomsburg, Pa., has awarded contracts for construction of an addition to its plant in Berwick, Pa., to provide 2,500 sq. ft.

Monarch Knitting Mills Co., Dunnville, Ont., is proceeding with a modernization program. New types of knitting and spinning machines are being installed.

National Silk Hosiery Mills, Inc., Indianapolis, Ind., has let general contract to Carl Geupel Construction Co., Indianapolis, for one-story addition, 73 x 75 ft. Cost over $30,000.

Sarfert Hosiery Mills, Inc., Philadelphia, Pa., have leased a floor in mill at J and Estaugh Sts., totaling 20,000 sq. ft., and will occupy for increased production.

Shoaf-Sink Knitting Mill, Lexington, N. C., is resuming operations after having been idle for a year. It is expected that a capacity production of 10,000 doz. prs. of hose per month will be reached by Jan. 1.

Superior Silk Mills, Ltd., Prescott, Ont., have formed a subsidiary company known as Simplex Textiles, Ltd., which will produce knitted fabrics for glove, dress and underwear trades on Simplex machines.

Processing Plant News

Belmont (N. C.) **Converting Co.,** recently incorporated with capital of 6000 shares, plans operation of a local dyeing and finishing mill. Incorporators include D. P. Stowe, treasurer of Perfection Spinning Co., and J. E. Ford, treasurer of Linford Mills, Inc.

Goodman & Theise, Inc., Scranton, Pa., will open a branch plant in Stafford Springs, Conn., in portion of the Rhode Island Worsted Co. plant shortly after the first of January to engage in silk printing, a new venture for the firm. The plant will occupy floor space of about 200 x 100 ft. Machinery is being installed. William Custer of Manchester is to be plant executive. Mr. Custer was with Cheney Brothers of Manchester for 27 years as superintendent of printing.

National Dyeing & Printing Co., Paterson, N. J., has leased its East Paterson plant to the Wright Aeronautical Corp. National also has plants at Williamsport, Pa., and in Canada.

Rock Hill (S. C.) **Printing & Finishing Co.** has awarded contract for a large pulverized fuel unit to provide 100,000 to 150,000 lb. of steam per hour.

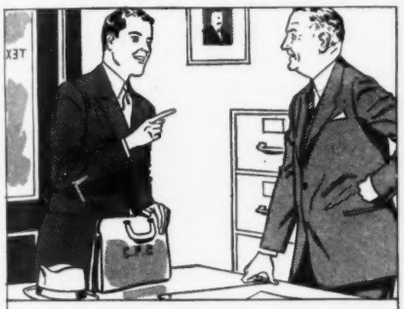
Slingsby Mfg. Co., Brantford, Ont., is having a water rectification plant erected for its mill at a cost of $20,000. Processing equipment is from W. J. Westaway Co., Ltd.

Textile Printing Co., Los Angeles, Calif., is the firm name under which William E. Ostermeier and Andre R. Dorlet have obtained a certificate to conduct business at 817 Lord Street.

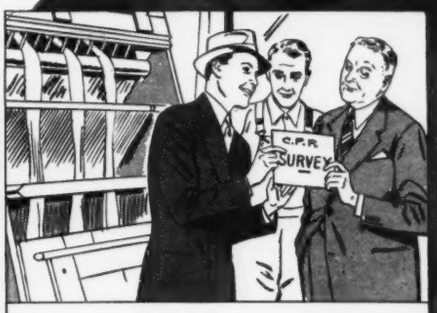
Union Bleachery, Greenville, S. C., has let general contract to C. M. Guest & Son, Anderson, S. C., for one-story addition. Cost reported over $50,000 with equipment. J. E. Sirrine & Co., Greenville, are engineers.

$12,000 CAME WALKING IN THE DOOR

AN ACTUAL EXPERIENCE OF ONE PLANT THAT CALLED IN A C.P.P. TECHNICAL MAN



"A Colgate-Palmolive-Peet man visited our plant and made a careful survey of our rayon processing formula. He said he thought it possible to reduce processing costs.



"On his advice, we ordered 25 barrels of his product for a trial run. We felt this quantity would provide a fair test of his suggestions in processing our rayon fabrics.

"We processed some 750,000 yards of goods with the new C.P.P. formula—and found soap costs were down 30% to 35%. This is an actual yearly saving of about $12,000.00."

C. P. P.'S FREE CONSULTING SERVICE MAY BE ABLE TO SAVE YOU MONEY! ASK YOUR C. P. P. MAN TODAY!

This is an actual case history. It is just another example of how quality soaps plus proper application can reduce costs.

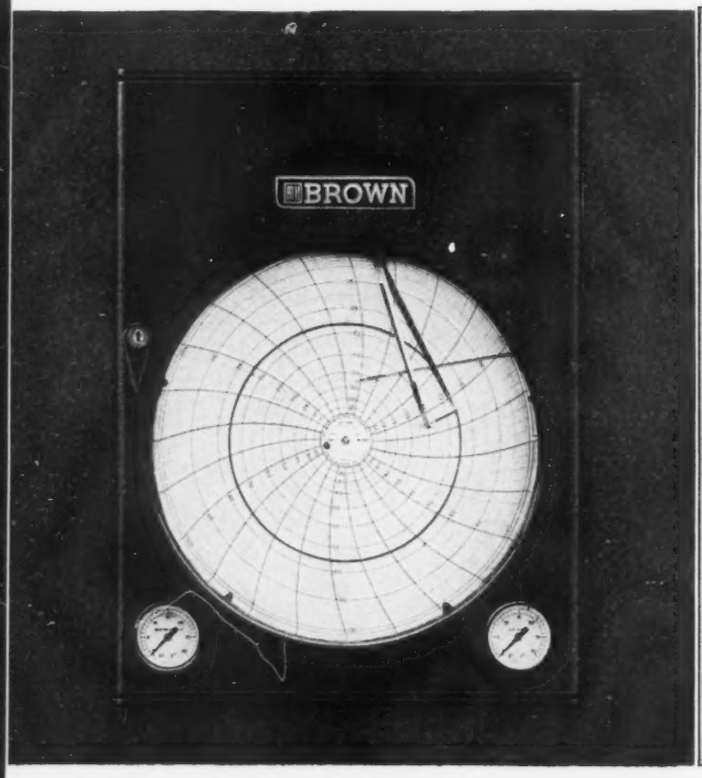
No matter what your processing requirements may be, in the complete line of C. P. P. products you'll find washing and wetting agents to exactly fit your own special needs.

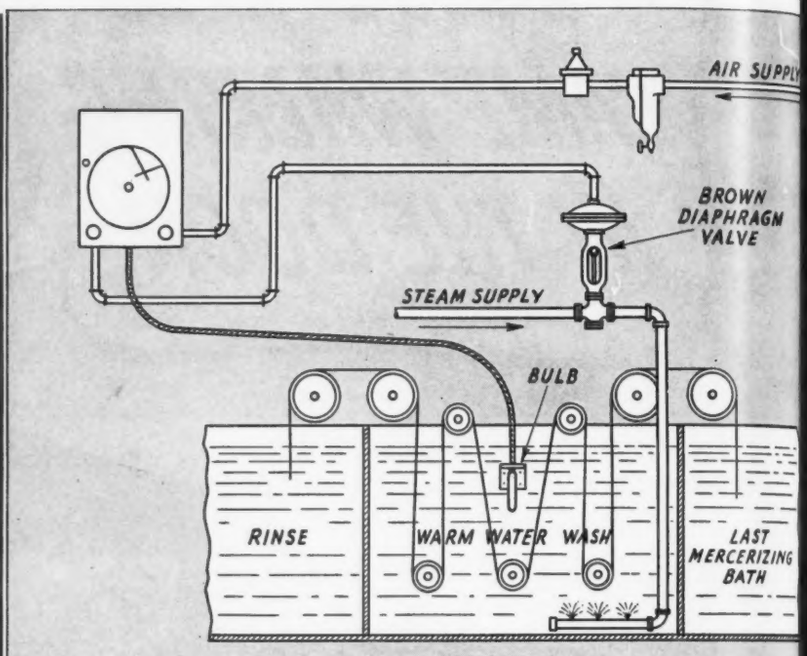
C.P.P. processing agents in most cases cost less to use than many so-called "special" products because of the volume in which they are produced. Ask your C.P.P. man for full information. Or write direct to us—no obligation, of course.

COLGATE-PALMOLIVE-PEET CO.

INDUSTRIAL DEPT., JERSEY CITY, N.J.

Gives Added Efficiency to MERCERIZING





BROWN THERMOMETER CONTROLLER FOR MERCERIZERS

The above illustration shows a typical installation including diaphragm valve, all accessories and Brown Thermometer Controller, Air-operated, 10% Throttlor

To remove all excess caustic from fibres it is important that the wash water temperature be held constant to insure uniform results. Water too hot ruins the lustre, fibres become hard and strength is destroyed. Water too cold means inefficient washing.

Better mercerizing and increased efficiency can easily be obtained when Brown Thermometer Controllers are put in charge to hold temperature constant.

Where they are installed mercerizing proceeds smoothly and the product is of uniform quality. Guesswork and frequent valve turning by hand and risk of damaging the cloth are eliminated.

Brown Thermometer Controllers automatically maintain the right temperature at all times which insures proper strength and lustre.

Dollars and cents savings are also effected because just enough steam is used and no more.

The Brown Thermometer Controller is easily installed. Bulb is mounted in the bath and located so that the movement of the fabric through the bath causes a continuous flow from the perforated steam branch pipes to the bulb, insuring accurate control of wash box temperatures.

Learn more about Brown Thermometer Controllers. You can rely on their precision and be confident of their dependability to hold temperature within desired limits to increase efficiency of mercerizing.

Send for Catalog No. 9304

This catalog fully describes the complete line of Brown Instruments and Minneapolis-Honeywell Controls for measuring and controlling moisture content, size cooking, bleaching, mercerizing, dyeing and other textile processes. Write

THE BROWN INSTRUMENT COMPANY
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.
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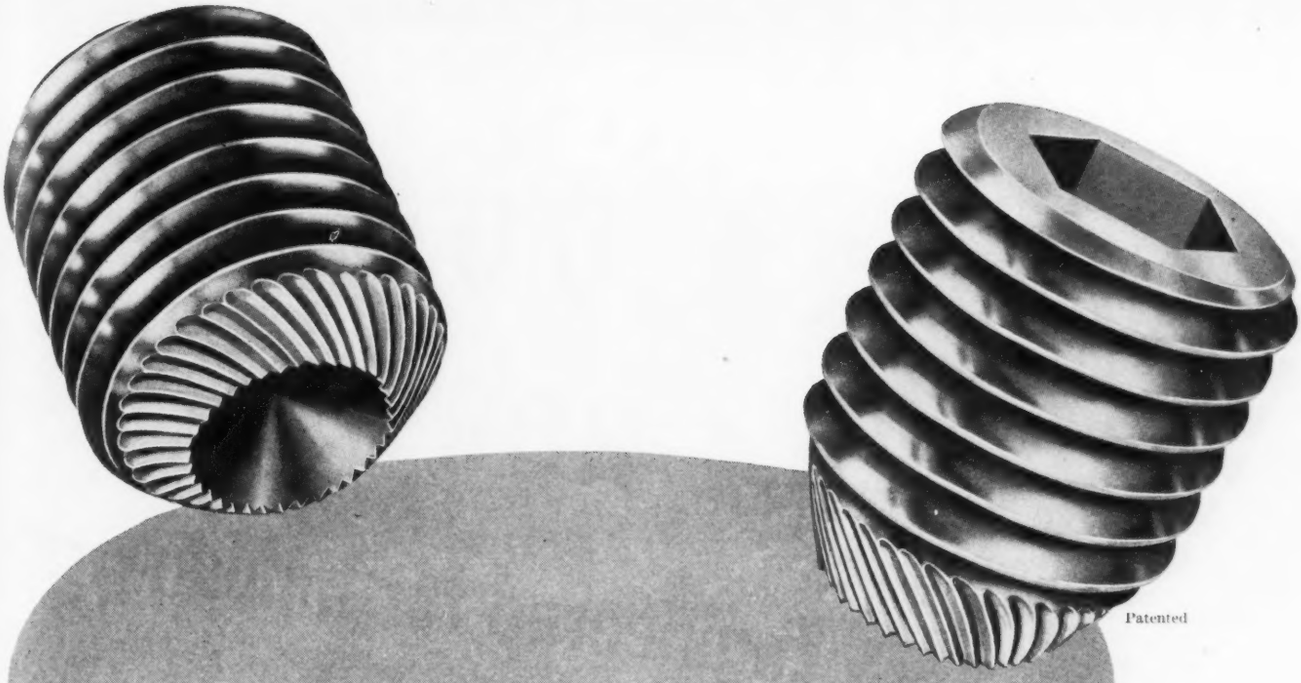
BROWN THERMOMETER CONTROLLERS *and* MINNEAPOLIS-HONEYWELL CONTROL SYSTEMS

To Measure and Control is to Economize



Patented

Trouble-shooters!

JUST set them up with no more than average effort, and the ingenious knurled cup points automatically lock into place with vibration-defying tenacity. Once in place, "Unbrako" Self-Lockers simply can't rattle loose no matter how severe the unwinding tendency. They *stay set!*

And this *unfailing ability to stay set* insures freedom from the common and expensive troubles caused when ordinary set screws work loose. Equip with "Unbrako" Self-Locking Set Screws and you'll enjoy trouble-free operation of your machinery . . . you'll enjoy the savings in maintenance costs they permit.

Remember too, that, in spite of their grip when in place, "Unbrako" Self-Lockers are easily applied, as easily adjusted or removed, and they can be used over and over again indefinitely—always with the same dependability.

Maintenance men in some of the largest and best known textile mills in the country think so highly of the "Unbrako" Self-Locking Set Screws that they are now using no other. Why not send in for catalog and samples?—discover how easy it is to cut down your own maintenance costs and prevent breakdowns by specifying "Unbrako".

STANDARD PRESSED STEEL CO.

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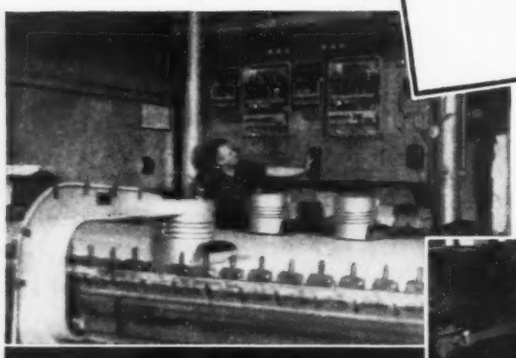
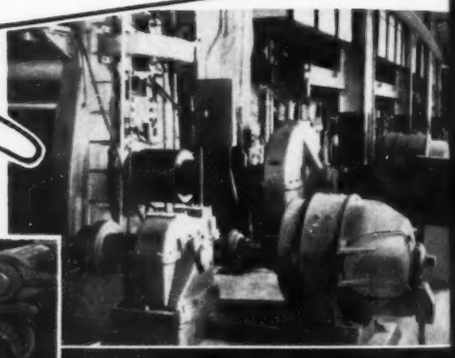
28,000,000 D-C HORSEPOWER

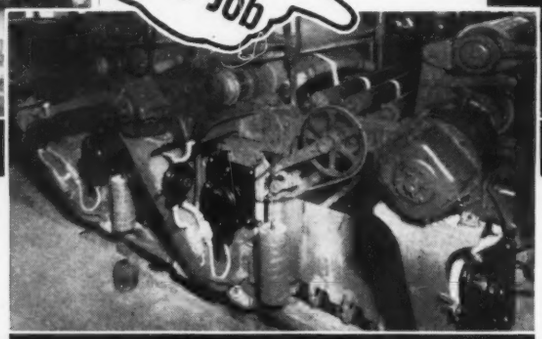
Engineered for Industry and—



Automatic Weft Straightening

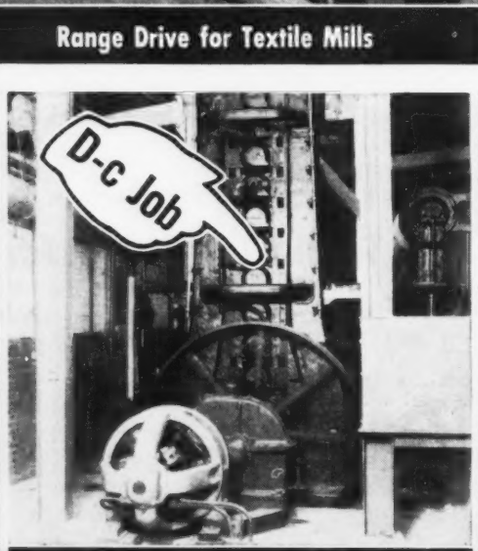


Sectional Paper-machine Drive

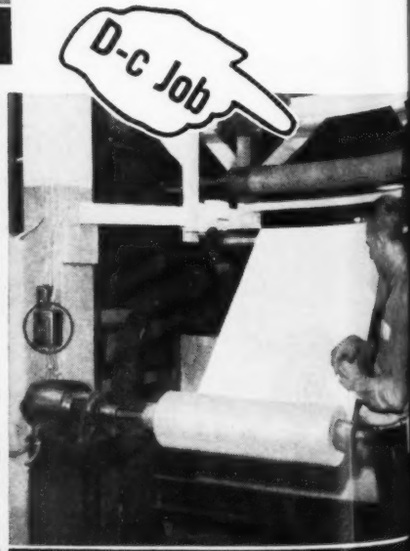


Range Drive for Textile Mills

High-speed Winder Drive



High-speed Supercalender Drive



Batcher Drive on Tenter

No D-C Job Has Stumped Us Yet

Maybe You Have One That Will!

D-C EQUIPMENT totalling more than 28,000,000 hp has been furnished by General Electric to date. Consider some of the fastest, newest, and most flexible machine drives in the textile and paper industries. Here wide speed-range, flexible control, and other desirable characteristics made direct current the choice of G-E engineers for:

The newest supercalender drive which applies unusually heavy nip pressure to iron on the gloss at high speed. This is for the newest paper mill in operation in the South, in Texas.

The first completely automatic weft-straightening control for woven goods like sheeting, marquisettes, shirting goods. Electronic tubes detect skew or bow, and control the d-c straightening motor.

Paper-machine drive for the first southern-pine newsprint mill. More than 105 d-c sectional paper-machine drives have been furnished to the pulp and paper industry.

The fastest (to our knowledge) tissue-machine drive, rated at 1800 fpm, which has been operated at 2000 fpm for short intervals.

Completely correlated textile range drives that make it possible to operate multiple machines as a continuous unit, without tearing the fabric or making it sag. Two of the four *types* of range drives furnished by General Electric are d-c.

The first successful electric batcher drives to keep constant tension on the cloth being batched, despite changing diameter of the batcher roll. Assures even, smooth rolls.

From the early days when Steinmetz and his associates calculated some of the original d-c formulas, General Electric has been continually designing and building d-c systems for practically every industry. Have you a d-c problem? Let us have the opportunity of discussing it with you. Our experience with d-c equips us to serve you well. General Electric, Schenectady, N. Y.

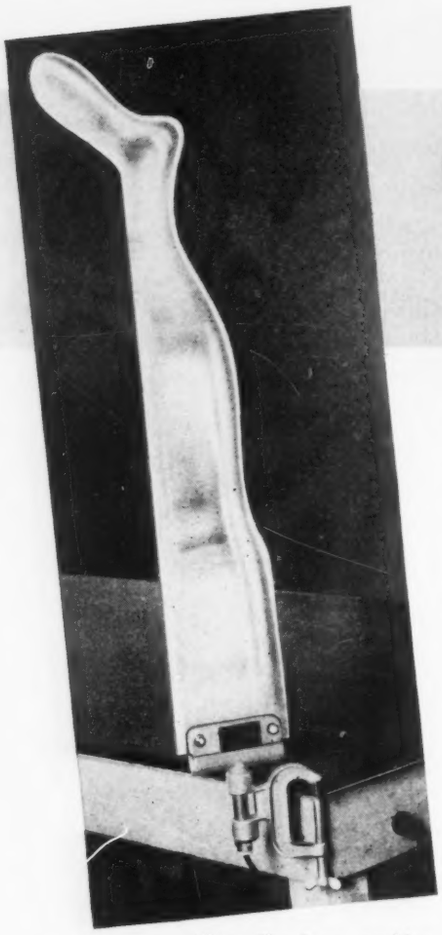
GENERAL ELECTRIC

661-7

Boarding steps up

WHEN THE FORMS ARE ALUMINUM

Thin Aluminum boards made of rolled sheet.



Cast Aluminum stocking drying form of the internally-heated type.

Aluminum stocking drying forms have an exceedingly hard, smooth surface; the Alumilite* process gives them an oxide finish of glass-like hardness. With these forms, boarders can step up production considerably and produce stockings with a finer finish. Here's why—

The smooth surface enables boarders to dress wet stockings on the forms quickly and easily, with a minimum of strain on the fabric. The hard surface effectively resists the abrasion encountered in boarding and stripping operations. There's no roughness developed to damage delicate hosiery, and no corrosion to cause staining.

Drying forms, whether internally or externally heated, are more efficient and do a better drying job when made of Aluminum. Their lighter weight makes them easier to handle. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh, Pa.

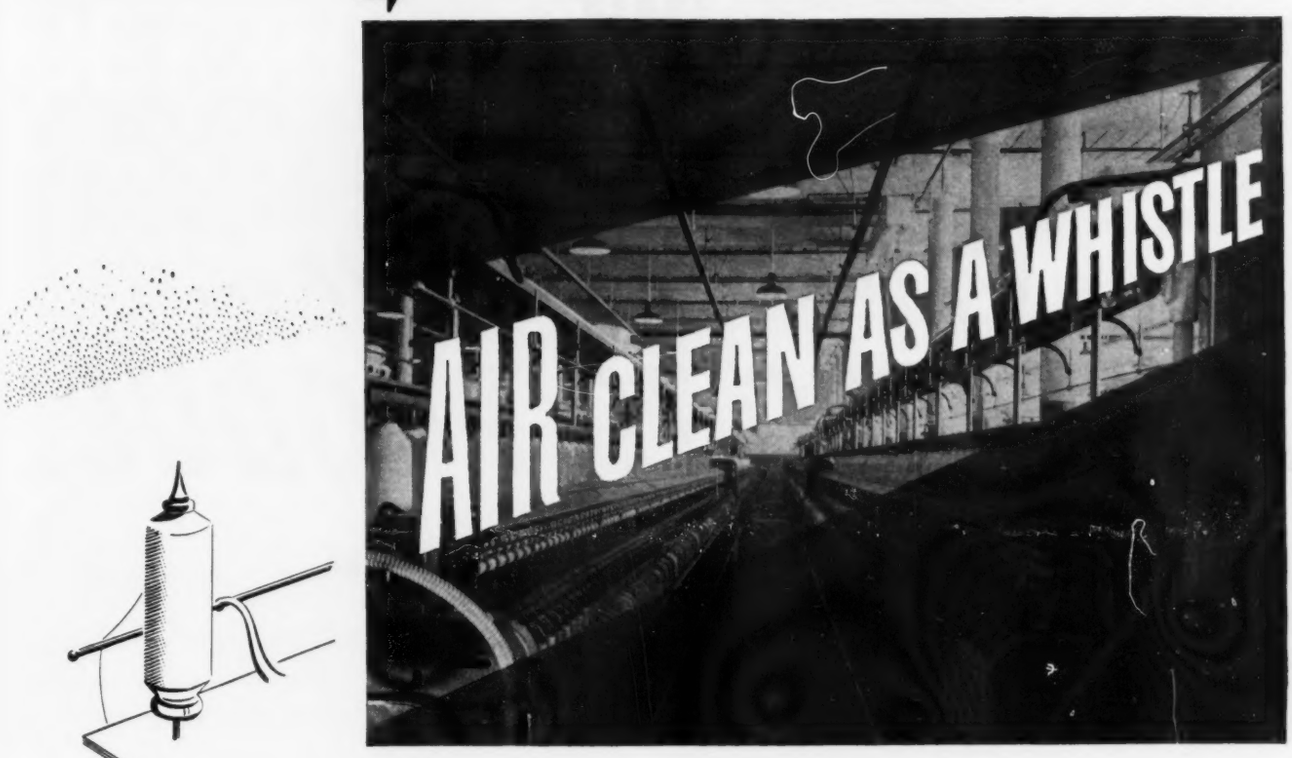
*Patented

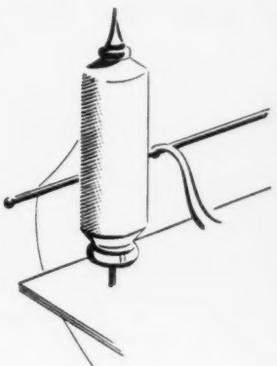
ALCOA

ALUMINUM

ALCOA·ALUMINUM

IN TEXTILE PROCESSING ROOMS

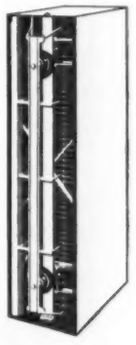




PRECIPITRON* Eliminates "Dirt-Streaking"

The Precipitron, science's newest development in air cleaning, provides help to the Textile Industry by insuring clean, streakless yarn and cloth.

The Precipitron is not an air filter. It is a simple electrostatic device that collects all solid particles from the air stream, including highly damaging soot and smoke, as small as 1/250,000th. of an inch. This cleaning ability prevents such destructive dirt and foreign matter from reaching spinning and drying rooms and other areas where cleanliness is a necessity for uniform color and quality in yarn or cloth.



In Textiles the Precipitron is already established in important mills. If your mill faces loss due to streaked or dirt-damaged goods, why not investigate the Precipitron and see what it can do for you? Complete details from your nearest Westinghouse Sales Office. Or write the Precipitron Department, Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio.

*Trade Mark Registered in U. S. A.

TUNE IN "MUSICAL AMERICANA," N. B. C. RED NETWORK, COAST-TO-COAST, EVERY THURSDAY EVENING.

Westinghouse Precipitron

Uncle Sam...

PREPARED TO PRODUCE

WITH TAYLOR'S HELP

FACTORIES hum from coast to coast. Plant lights shine out all through the night. Sounds and sights of this nation preparing to protect our peace, our freedom, our good American way of life.

American Industry has buckled down to its biggest production job since a similar time of need, twenty-odd years ago, and is doing a grand job of it. More clothing, more food, more power, more petroleum *are* already being produced. From eastern to western oceans, vital industrial processes have been stepped up amazingly.

And they have been stepped up confidently, with the absolute assurance that swiftly increased quantity will not mean decreased quality.

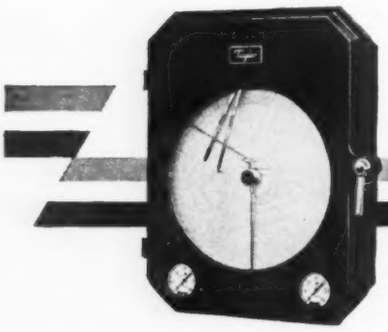
That's where Taylor comes in. Taylor Instruments are helping Industry speed up *safe* production. Taylor Instruments are helping Industry produce to more rigid specifications easily, fully, and economically.

Modern plants use Taylor Instruments—like the great new Taylor Fulscope Controller (the unique five-in-one controller!)—to help make plant operations—manufacturing, processing, or whatever they may be—*automatically* exact, *automatically* foolproof, *automatically* faster and more efficient.

Even in crisis, American Industry *can* be confident. Nowhere else in the world are finer instruments more completely guarding vitally necessary operations.

Taylor is glad and grateful for this vast, unique opportunity to help America "Be Prepared." Uncle Sam *will* be ready. The United States *is* prepared to produce. We *are* producing. Our production is our defense.

Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada.



The new
Taylor Fulscope Controller
helping Industry's
huge preparedness program

BE PREPARED WITH **Taylor**

Indicating / Recording · Controlling

TEMPERATURE, PRESSURE, FLOW
and **LEVEL INSTRUMENTS**

GET RID OF "*Factory Film*"

WITH NEW DULUX HIGH-HIDING MILL WHITE

HOW "FACTORY FILM" OCCURS . . .
The dust, dirt, and lint that settle on plant walls and ceilings form a dull, lifeless film . . . which cuts down light reflection. The yellowing of inferior mill whites is another cause of "Factory Film," making repaintings more frequent than necessary.

DULUX . . . THE MODERN WAY TO CHECK "FACTORY FILM"

DULUX High-Hiding Mill White reduces formation of "Factory Film" to a minimum because its hard, tile-smooth surface offers dirt no foothold. It is easy to keep clean. DULUX gives maximum light reflection. Its tough film resists yellowing, making repaintings few and far between.

DULUX *High-Hiding Mill White*
Makes one-coat jobs possible!

Du Pont developed a method of *increasing the concentration of high-hiding pigment particles in suspension . . . while maintaining an unusually good spreading rate.* This stepped-up hiding power is so intense that DULUX often does the job with ONLY ONE COAT!

This means new lows in economy. For you need fewer gallons per job, and labor costs for application are substantially reduced. And most important of all, DULUX means *speed* in application. The paint crew goes over your walls and ceilings *once* instead of twice . . . and the job's done.

DULUX is a mill white of brilliant, uniform whiteness . . . gives maximum light reflection . . . has amazing whiteness retention . . . and is washable. Send in the coupon for full details.

DU PONT
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DULUX
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HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. T-120
Finishes Division, Wilmington, Delaware

Please see that I get complete information about **DULUX** High-Hiding Mill White—and your new booklet.

Name.....

Address.....

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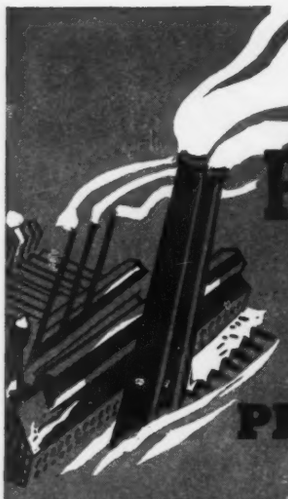


Is your plant

PREPARED

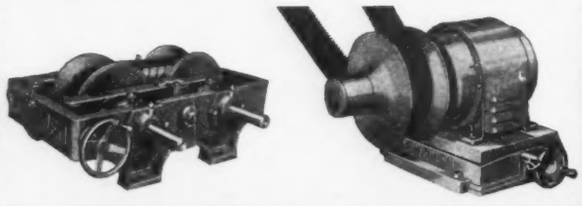
for

MAXIMUM PRODUCTION?

• Are you allowing fixed machine speeds to bottleneck your production? Provide the right speed at the right time with

LEWELLEN

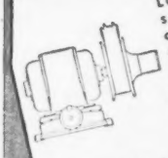
Variable Speed Control



and conquer today's great production challenge!

Infinitely variable speed control is a "must" for the high speed production demands of the day. Install a Lewellen Variable Speed Transmission (left illustration) or Motor Pulley (right illustration) in the drive of each production machine. Then, watch production increase! The quality of finished units is improved—rejections are reduced to a minimum.

Our engineers are constantly working with companies in order to solve their speed control problems. This is our specialty. It has been for more than 40 years. Why not call a Lewellen representative today or write us direct?



EXPECT REMARKABLE RESULTS! With the proper size Lewellen Pulley you can drive a machine at infinitely variable speeds; connect directly between the motor and the machine; operate the driven shaft at desired speeds. And, think what a saving it means to operate your production machines at the CORRECT SPEED! There is a Lewellen Pulley for your motor horsepower and speed, for all ratings from fractional to 7½ h.p. The speed range is 3 to 1 for all pulley sizes. (One size has a speed range of 2¾ to 1.) **Call your Lewellen representative or write today for complete information.**

LEWELLEN MANUFACTURING CO., COLUMBUS, INDIANA

Lewellen knows speed control

FULLER STEELGRIPT PATENTED

MATERIALS GRIPPED IN STEEL!

THE patented Steelgript Brush construction has exclusive advantages that will cut the high cost of brush replacements, and make your brush expenditures an investment instead of an expense.

COTTON CARD REFILLS—Brush Strips spiraled to fit all makes and diameters of wood cores.

BURR PICKER BRUSH STRIP REFILLS

WOOL TRANSFER BRUSH—Brush Strips mounted longitudinally across metal hubs or flanges; makes a permanent core—quickly refillable.

STEELGRIPT BRUSHES in addition to the above Textile Industry uses are also designed for Cloth Steaming, Vertical Brush Rolls, Thread Dressers, Wool Cards, etc.

Write or send Blue Prints or Brush Specifications of your requirements.

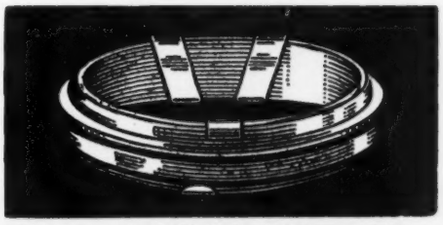
FULLER manufactures a complete line of standard textile brushes, including the famous FULLER FIBER TEXTILE BROOM; also Loom, Comber, Finger, Roller and Floor Brushes. Send for Industrial Catalog.

The **FULLER BRUSH** *Company*

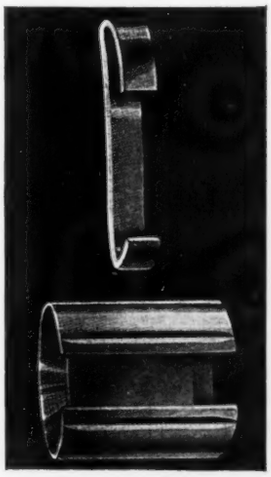
INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - HARTFORD, CONN.

The Hunting Cheetah is the *fastest* animal traveler...



Above—Bowen *Patented* Vertical Offset Traveler—After exhaustive tests under actual running conditions, the Bowen Patented Vertical Offset Traveler has proved its worth in the twisting of cords and plys. Based on the true mechanical principle of taking a diagonal position with relation to the ring, presenting a bearing surface over the full width of the Traveler. This design prevents gripping or binding—gives an even tension—an evener rounded product—longer life to the traveler. Send for samples and prices.



Left—Bowen—*Patented*—Bevel Edge—The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks—no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights for all kinds and counts of yarns.

Right—*High*—Ne-Bow—*Patented* Vertical Ring Traveler—Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the recent adoption of the vertical ring, particularly of the lubricating type.

By eliminating the pivoting action of the traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

U. S. TRAVELERS

Meet the *Speed* test—the *Quality* test—and the *Economy* test!

U. S. Travelers reduce the cost of producing high quality yarns because they are designed and made for fast, smooth work . . . with the closest attention to every detail. They are the result of years of experience of men who know the needs of the textile industry in this field—that is why they are the choice of experienced textile operators the country over.

• *Sold under the trade names*

Bowen Round Point Travelers	Bowen Patented Bevel Edge
Bowen Square Point Travelers	Bowen Patented Ne-Bow Vertical
Bowen Improved Vertical Bronze	Bowen Patented Vertical Offset

Bowen Flat Oval and Round Wire Travelers

U. S. RING TRAVELER CO.

PROVIDENCE RHODE ISLAND

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A Traveler for Every Fibre

AROOSTOOCRAT

• *Photos Courtesy Maine Development Commission, Brooke, Smith, French & Dorrance, Inc.*

• **Equal to the finest imported**

DUTCH STARCH

• • •

MADE WITH THE MOST MODERN EQUIPMENT

Now textile men who have been buying imported Dutch Potato Starch at a premium can continue to get the same high grade of starch . . . by ordering AROOSTOOCRAT.

The erection and operation of our plant has proved beyond question that with the proper equipment and processes, AROOSTOOCRAT is producing in this country a grade of potato starch equal to the best imported Dutch Starch — in quantity to meet the needs of users of this type of starch.

• ***Your inquiries are invited as to prices, quantities and deliveries.***

Reason for AROOSTOOCRAT Quality

The first plant of its kind in the United States —employing the complete plans and equipment and processes of European plants, where starch making is an EXACT SCIENCE. All AROOSTOOCRAT Starch, for instance, is washed in ARTESIAN WELL WATER, for absolute purity.

Uniform Quality Guaranteed

AROOSTOOK POTATO PRODUCTS, INC.

HOULTON, MAINE

• *Sales Agent:* MORNINGSTAR, NICOL, INC., 630 W. 51st St., *New York City*

ANNOUNCING FUGITIVE STAMPTEX

Available in the following colors:
Red, Blue, Green, Yellow, Brown, Purple, Orange.

FOR THE MORE ACCURATE IDENTIFICATION OF GREY GOODS

COMPOSED OF SILK, VISCOSE, ACETATE, COTTON AND WOOL

The United States Testing Company, Inc., now announces a new method of identifying grey goods that makes all previous methods obsolete. This new development is STAMPTEX . . . a fugitive ink for stamp pads. It enables weavers and knitters to rubber-stamp their grey goods with the necessary identifying information neatly and in complete detail. Fugitive STAMPTEX washes away easily, quickly, and completely. STAMPTEX comes in seven colors.

STAMPTEX is sold in pint containers

UNITED STATES TESTING COMPANY, INC.

ESTABLISHED 1880

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NEW YORK PHILADELPHIA GREENSBORO WOONSOCKET CHICAGO

The Joseph Noone's Sons Company

A. Erland Goyette, Proprietor

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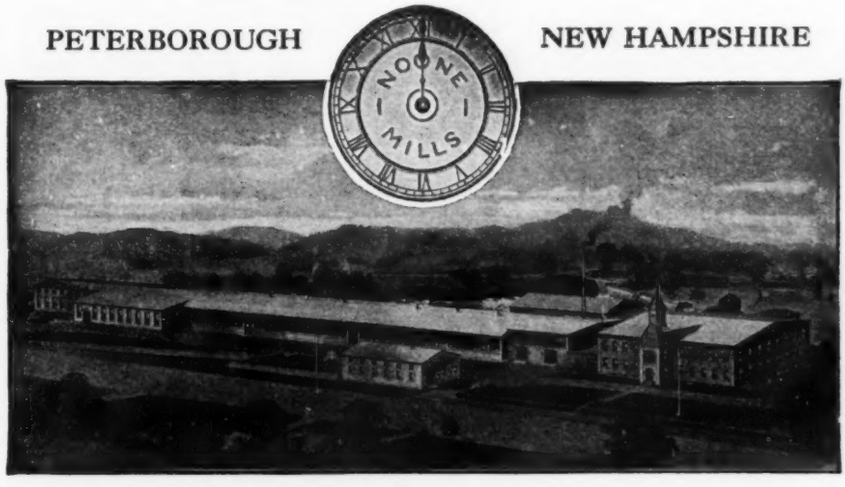

Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

WILLIAM R. NOONE & COMPANY

Selling Agents

ARNOLD T. MALONE, Manager

105 Washington Street Boston, Mass.

INSTANT

Wetting out!

Draves Test Shows New Nopco D L N wets out *instantly!*

Among the many advantages of the New Nopco D L N over other wetting out agents is its quick action even at lowest concentrations. Check this imposing list for answers to your wetting out problems.

1. Wets out in less than a second according to Draves Test.
2. Wets out in solutions as low as 1%.
3. Nopco D L N can be blended with all types of vegetable oils.
4. Excellent results to be had with Cotton, Rayon, Acetate and Rayon-Acetate mixtures.
5. Exceptional re-wetting out properties applicable for Sanforizing and twist-setting operations.
6. Offered at low cost by a reliable manufacturer.

Nopco D L N can help cut your wetting out costs and speed production. Get the facts today.

NOPCO

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NATIONAL OIL PRODUCTS CO.

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DYED WOOL STOCK
PACKAGE YARN
COTTON LINTERS
MERCERIZED WARPS
RAYON PIECE GOODS
KNIT GOODS
NAPTHOL DYED PIECE GOODS
DYED WARPS
PRINT GOODS
CARBONIZED WOOL CLOTH
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The 1940 Model Proctor Dryers for the textile industry feature important benefits... Speedy Production... Unvarying Uniformity... Highest Quality Results... Modern Simplified Design... Extreme Compactness... and Big All-Around Savings!

PROCTOR & SCHWARTZ • INC • PHILADELPHIA

PEQUOT
REG. U.S. PAT. OFF.
SHEETS
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PILLOW CASES

The Most Popular Sheets in America

Made Stronger—Wear Longer

Sell Faster

PEQUOT MILLS

Salem, Mass.

3-IN-ONE OIL

protects

SMALL MOVING PARTS OF

HOSIERY SEAMERS

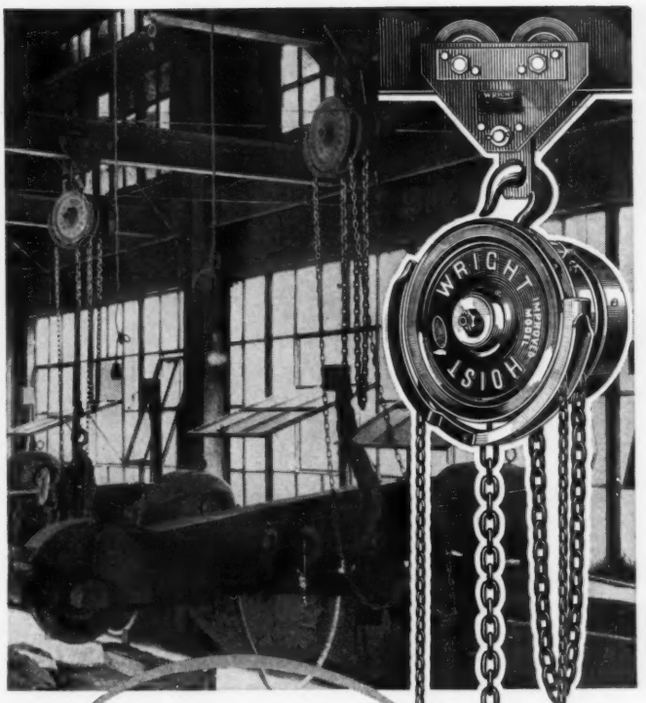
Lubricates • Cleans Polishes • Prevents Rust

Here is *another* of the many textile machines on which the correct lubrication, cleansing and protection of small moving parts is essential to efficient operation and quality production—and "3-IN-ONE" Oil meets these requirements! Looms, sewing machines, spinners, loopers, twisters—each have small parts that cause trouble if the right oil is not used. Write for special Mill Prices on "3-IN-ONE" Oil today!

THE A. S. BOYLE COMPANY

Distributors — Jersey City, N. J.

"3-IN-ONE" OIL



THE WRIGHT WAY to SPEED PRODUCTION

Today's demand on all industry is for faster and faster production. **Wright Improved High Speed Hoists** will help you speed *your* production—regardless of service—and in any capacity from ¼ ton to 50 tons.

WRIGHT HOISTS can do that because in the construction of these hoists there are 21 definite points of superiority. For example: precision load wheel bearings are used to assure smooth, fast, positive action; a WRIGHT safety guard prevents the load chain, regardless of position, from riding out of the pocket; full zinc coating defeats corrosion.

WRIGHT TROLLEYS are built to the same high standards set up for WRIGHT HOISTS.

The new WRIGHT CATALOG is full of useful information on hoisting. Write for your copy.

Order from your distributor

BUY ACCO QUALITY *in Wright Hoists, Cranes and Trolleys; Tru-Lay Preformed Wire Rope; Reading-Pratt & Cady Valves; Campbell Abrasive Cutting Machines; American Chains; Page Welding Electrodes and Page Wire Fence.*

WRIGHT MANUFACTURING DIVISION

YORK, PENNSYLVANIA

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.

Sterling Ring Travelers

COMPLETE

End the year with complete Traveler satisfaction.

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STERLING RING TRAVELER CO.

FALL RIVER, MASS.

more than **1000**

STYLES and SIZES of RINGS

In addition to making all standard types of spinning and twister rings, we are the sole U. S. manufacturers of the famous Eadie Rings, which are World Champion high-speed rings for a wide range of twisting and spinning operations. For COMPREHENSIVE ring counsel and service, call on DIAMOND FINISH!

WE MAKE ALL TYPES OF HOLDERS

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DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

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COLLINS & AIKMAN CORPORATION

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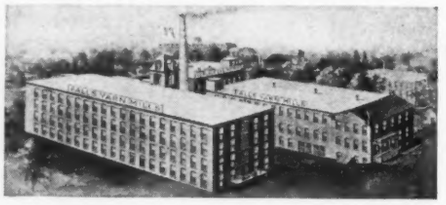
New York • Philadelphia • Boston

FALLS YARN MILLS

WOONSOCKET, R. I.

Incorporated 1904



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Standard Grades — Lustrous — Delustred—Superfine

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Yarns for all purposes

French and English Spun Worsted
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LOS ANGELES—Arthur Bone, 4436 Worth St.
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IF you are having the slightest spinning trouble, any of our representatives, who are men thoroughly experienced in this branch of the textile industry, are at your service at all times. A trial order will convince you of the superiority and durability of Dary Ring Travelers.

The Dary Ring Traveler Co.

Taunton, Mass.

B. G. DARY, Treas.

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70% of mills use NON-FLUID OIL because it does not creep or drip from roll necks to damage yarn and roll covers.

The savings in clean yarn alone pay for NON-FLUID OIL. Further savings are made because roll covers are kept from oil rot. NON-FLUID OIL outlasts oil 3 to 5 times, saving on oil bills.

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New York & New Jersey Lubricant Co.

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TRADE MARK REGISTERED NON-FLUID OIL U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

LAZENBY FILLING WINDERS

→ REDUCE LOOM REPAIRS
→ INCREASE PRODUCTION
→ IMPROVE QUALITY

Don't hold down your looms by poor Filling. Provide your weave room with constantly uniform Filling of maximum yardage, and secure higher loom efficiency with reduced maintenance and repairs.
Send us a small supply of your yarn for Test Wind Report and Catalog.

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Ring Spinning and Twister Travelers

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In the UNITED STATES
American • Hicks • Wilson

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Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon, silk — in all fashionable combinations and effects and in many original effects. Write for samples.

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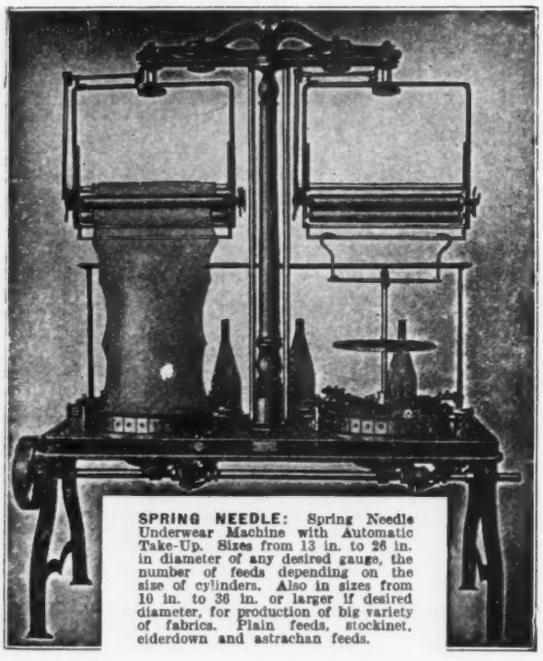
meet the need for Speed—
for Quality and Low Cost



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CRANE Improved Automatic 3 Colored

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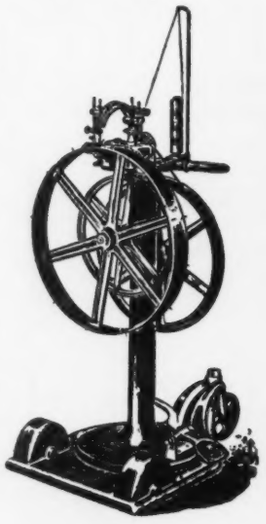

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No. 3

machine and hand knitting

Yarns

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BATHING SUITS
OUTERWEAR
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Complete color assortments

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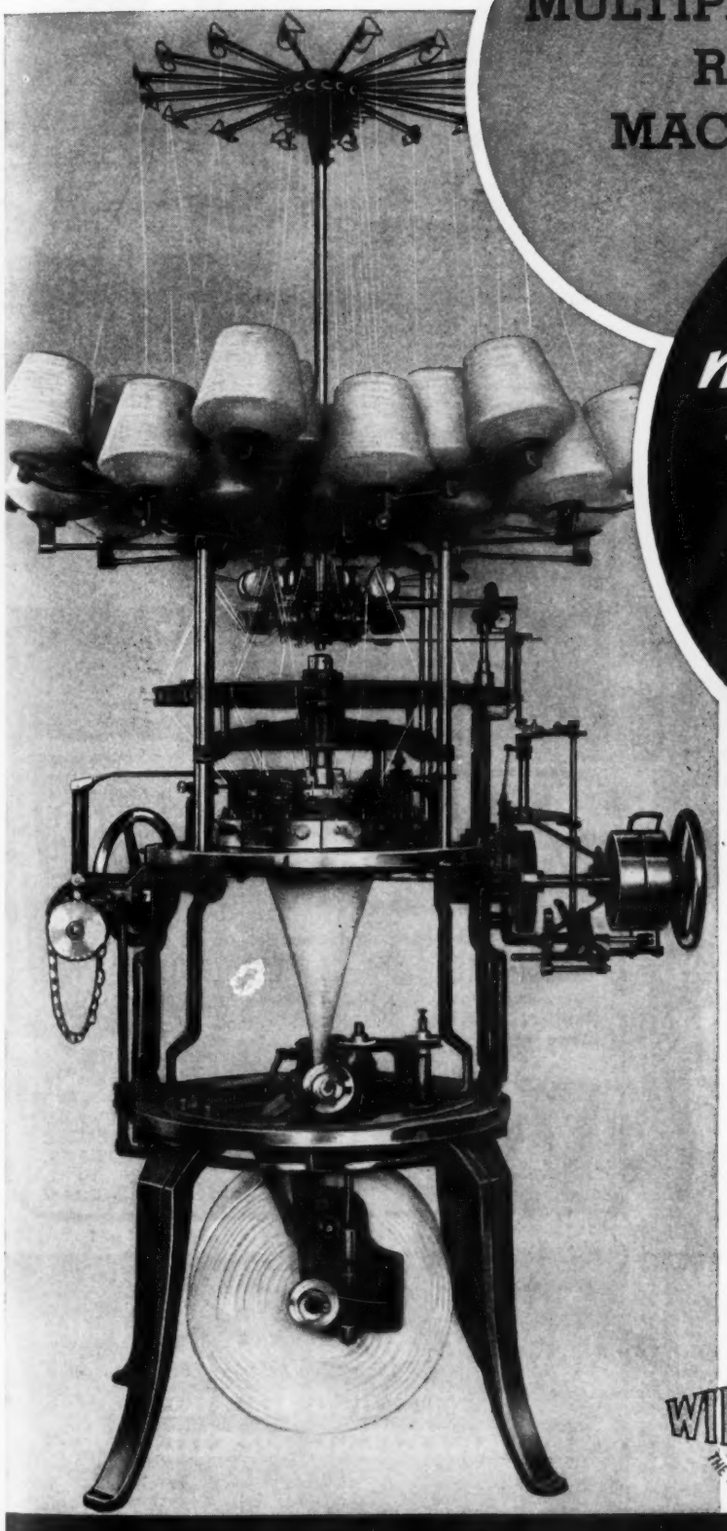

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Besides, it will give you more patterns, absolutely trouble-free operation and many mechanical improvements all designed to improve your products.

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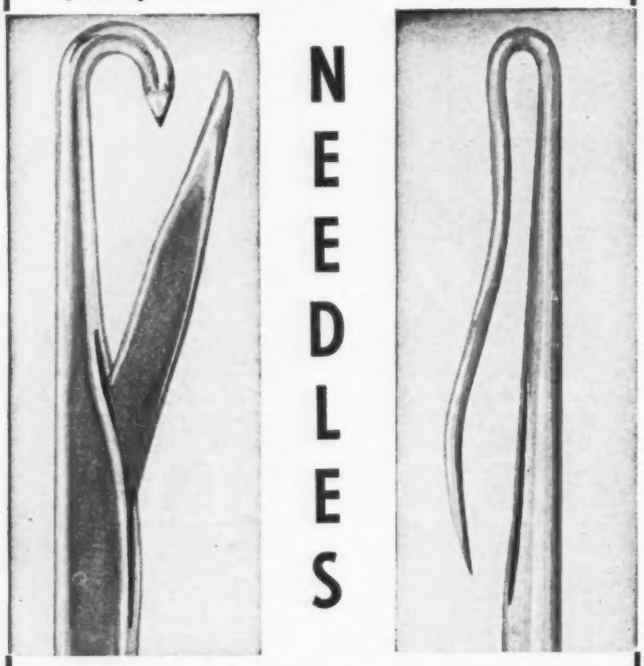
Manufacturers of

Quality LATCH and SPRING-BEARD



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The ideal high speed equipment for an incredibly wide range of products: Curtains . . . Drapes . . . Bed Spreads . . . Bath Mats . . . Dish Cloths . . . Braids . . . Fringes . . . Nets . . . and many more.

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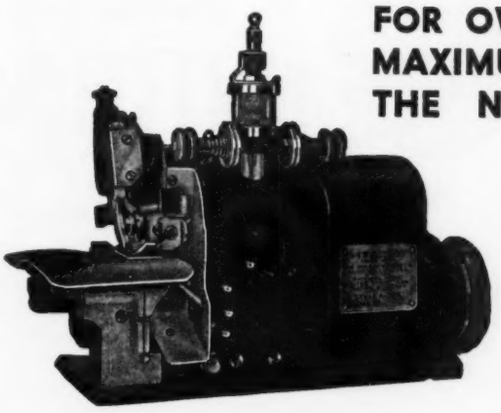

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200 VARIETIES FOR 200 PURPOSES

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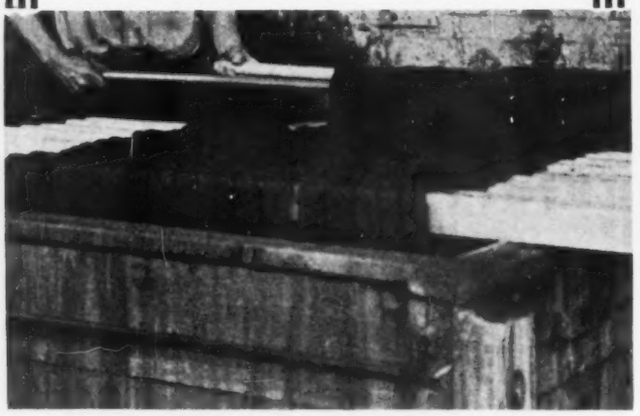

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TINTINOL involves the control of three essential factors in Rayon Manufacturing by one simple application .. *Moisture, Lubrication, Tinting.* ★ It imparts tenacity similar to good running cotton, produces a firm web, reduces the crunch, reduces static and split laps. It is the most convenient and economical tinting process known. *No extra handling* . . . no drying . . . no heating . . . no harsh stock or curled fibres. ★ TINTINOL is shipped in light steel drums which serve for supply reservoir. You can have *any* color by the turn of a valve. ★ Base Oil (55) concentrate is also available for conditioning white Rayon stocks where tinting is not necessary.

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Star Brand's the No. 1 Silicate for peroxide bleaching, a title bestowed by mills throughout the industry, on these four counts:

Star is brilliantly clear
Star is specially purified
Star quality is uniform
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It pays you to use Star; reduces your seconds, saves peroxide. Ask for prices in drums and tank cars.

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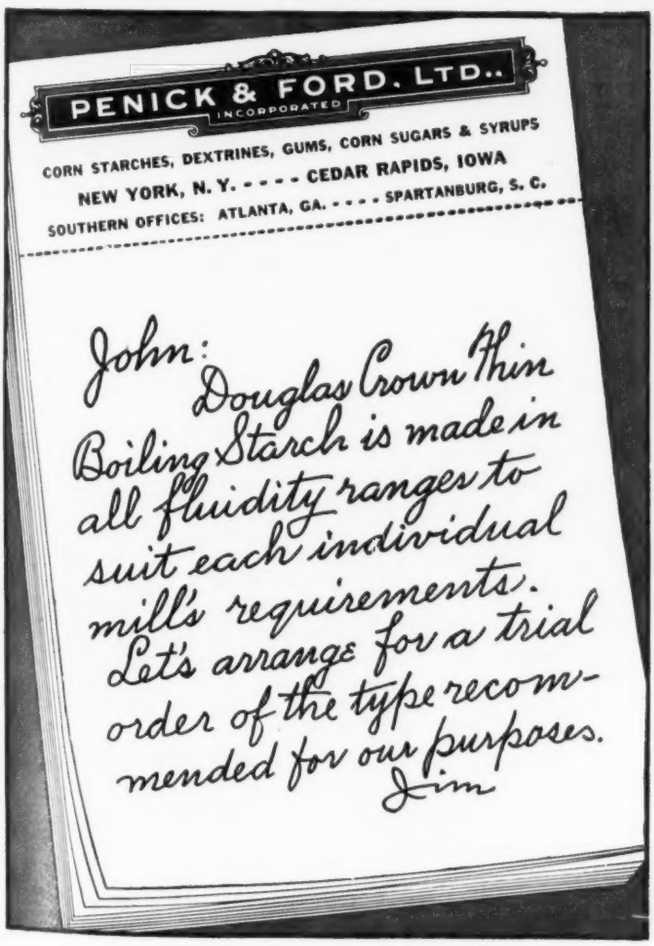
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hosiery DuraBeau finished
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● *Misty sheerness, exquisite dullness and delicacy are sealed into the fibres for miles more wear when the hosiery is DuraBeau finished.*

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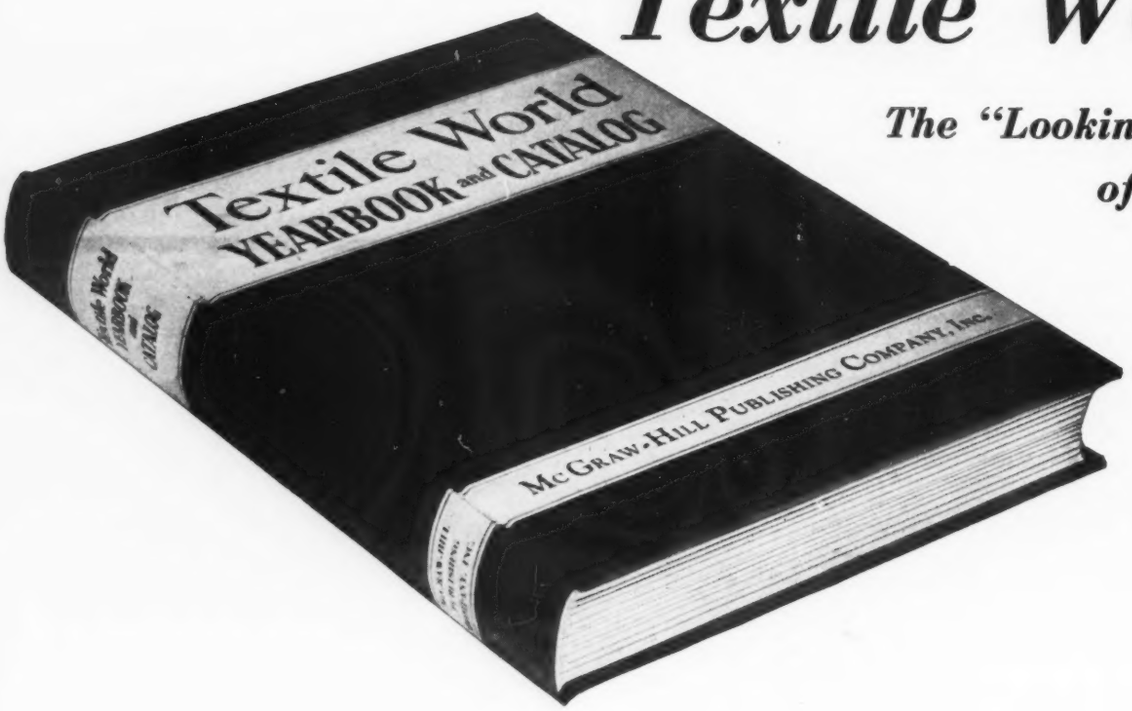
The "Looking Up" Place of the Textile Industry



TIME is the essence of many a textile mill contract. That is why we make this time-saving suggestion — whatever mill operating question comes up in the day's work, "look it up" first in the 1940 edition of the TEXTILE WORLD YEARBOOK AND CATALOG, recently delivered to your mill.

Again this year — the 18th year of this cooperative service to the textile industry — this handy reference volume contains a wealth of mill reference data compiled for your convenience, by the editors of TEXTILE WORLD.

And in the catalog section, this new volume contains over 200 pages of helpful catalog data supplied by scores of the country's leading companies providing machinery, equipment, supplies, chemicals and services to the textile mills of the country.

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THE 1940 EDITION OF THE *Yearbook and Catalog*

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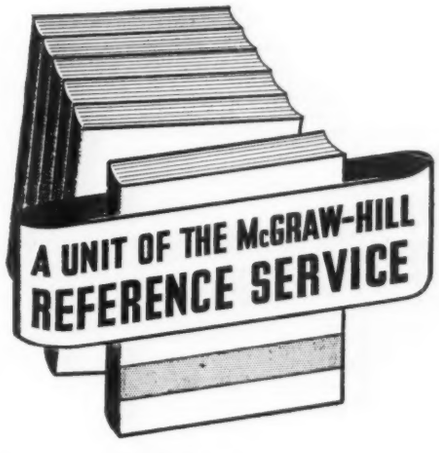

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Woonsocket Napping Machinery Co.
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When you need buying data on any of the above firms, "look it up" first in the Textile World Yearbook and Catalog.

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He is used to large volume production so you may be sure he can handle your job.

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Completely equipped Woolen BLANKET and Woolen Cloth Mill capable of handling large volume of Government and Civilian business. Immediate possession.
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The business should be capable of handling from a Boston headquarters.

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AUTOMATIC BOBBINS
250 M 8" 3 ring Automatic Bobbins Suitable for Woolen or Worsted Work. Price & Samples on request.
FS-831, Textile World
330 W. 42nd St., New York City

WILDMAN
28 cut
KNITTING MACHINES
all sizes 10" to 20"; all in first class working condition
FS-830, Textile World
330 West 42nd St., New York City

WANTED
COMPLETE BRAID PLANT
or
NARROW FABRIC LOOMS—
TWISTERS — KNITTERS
BRAIDERS or CORD MACHINES
AVIV TRIMMINGS LIMITED
1435 Bleury Street Montreal, Canada

WANTED
PAPER DRYER
OR COMPLETE COATING MACHINE
Used paper dryer or complete paper coating machine suitable for use in pyroxylin or similar coating on paper. Width up to 54". Write full details.
P. O. Box 270, Morristown, N. J.

WANTED
One electric **Conditioning Oven** for laboratory test
Machine for Testing Tensile Strength of cotton duck up to 800#
Quantity of **4" Cards** with 12" oilers
Looms for webbing
W-829, Textile World
330 W. 42nd St., New York City

WANTED
WOOLEN CARDS
Several sets of wide 3 cylinder Woolen Cards
W-827, Textile World
330 West 42nd St., N. Y. City

AUCTION ADVERTISING—PAGE 154

EXTRAORDINARY LIQUIDATION
FARR ALPACA COMPANY

FINISHING PLANT (Mill No. 2)

Complete Equipment for Dyeing & Finishing Rayon, Worsted & Mixtures.
Equipment for Dyeing & Finishing Rayon, Worsteds & Mixtures
20—Rice Barton & Fales-Butterworth Stainless Steel Dye Jigs
30—Riggs & Lombard & Hunter Dye Kettles.
2—Butterworth 90' Clip Tenter Frames with Housings.
2—Butterworth 60' Open Clip Tenter Frames.
5—Heathcote Pin Tenter Dryers.
5—Perkins and Butterworth Hydraulic & Finishing Calendars.
2—Proctor & Schwartz Loop Dryer, revolving sticks 96".
1—Morrison-Palmer Quetch Tenter Unit.
6—Copper Can Dryers, 6 to 23 Cans.
3—Shears 2 to 4 Blade, 50" to 66".
4—Butterworth Singeing Machines, plate and gas type, 40" to 70".
4—Gessner Steam Cloth Presses, 50" to 72".
1—36 Roll 90" Woonsocket Napper.
2—Full Width Open Washers and Boil Off Units.
8—Continuous Washers and Crabbs.
3—Butterworth 50" 2 Rubber roll Dye Padders.
1—Morrison 2 Roll Quetch, 60" face.
1—48" Open Top Centrifugal Extractor.
7—Rope Washers.
1—Scutcher 64".
2—Laundry Washers

MISCELLANEOUS

Doublers
Flat Folders
Steamers
Beamers
Batchers
Sanding & Brushing Machines
Sewing Machines
Scales
Trucks
Shells
Laboratory Equipment
Complete Machine and Carpenter Shop

Office Furniture and Equipment

ASK FOR FULLY ILLUSTRATED BULLETIN

SPINNING & WEAVING PLANT
(Mill No. 1)

LOOMS

All Motor Driven and complete

136—Draper Modified "D" Looms, 47½" Reed Space, 150 picks per minute.
100—Draper Modified "D" Looms, 69½" Reed Space, 130 picks per minute.

WORSTED EQUIPMENT

8—Sets, 7 operations Worsted Drawing.
68—Spindle Ring Spinning Frames, 2¾" ring and 1¼" ring.
89—160 Spindle Cap Spinning Frames; self doffers.
2—96 Spindle Model 60 G.F. Universal Tube Winders. 1933.
1—100 Spindle Model 56 B Foster Cone or Tube Winder. 1936.
3—Slashers.
3—250 Gallon-Size Tanks.
2—Ball Warpers with Worcester Warp Compressor Creels.
3—80" Sipp Eastwood Circular Warpers, motor driven.
5000 feet of Ball Bearing Roller Conveyor, 12 to 36" widths.

SUPPLIES

19,000 Heddle Frames 10".
2—Million Heddles 10".
3—Million Bobbins, Practically new.
10,000 Reeds.
212,000 Spools, all sizes.

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Above Excellent Equipment priced low for immediate disposal.

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CONSOLIDATED PRODUCTS CO., INC.

Telephone Holyoke 7323 — **HOLYOKE MASS.** — **Cable Equipment, N. Y.**

WE OFFER FOR IMMEDIATE SALE

6—Luther Single Brush Thread Dressers
2—Foster #75 Skein to Cone Winders with measuring Devices
1—Foster #25 — 80 Spindle Doubler
1—Universal #8 Single Head mounted on column
1—50 Spindle, 1—54 Spindle, 1—64 Spindle } Universal #60 GF Winders all motor driven
1—12 Spindle Atwood Semi-Automatic Spooling Table

1—Alfred Suter Single Strand Strength Tester
5—120 yd. Brown & Sharpe Yarn Reels
1—80 yd. Brown & Sharpe Yarn Reel
1—Alfred Suter 120 yd. Yarn Reel
2—Alfred Suter Twist Testers with 3" take-up
1—Alfred Suter Twist Tester with 5" take-up
2—Brown & Sharpe Grain Scales

Also, our regular reconditioned and guaranteed stock of Universal #50 and #90 winders, Foster #12 winders, Oswald Lever Bottle Bobbin Winders, Atwood skein winders, Atwood spinners, Easton & Burnham Skein winders and Atwood 5B Spinners.

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141 W. 17TH ST.
NEW YORK CITY

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REAL ESTATE — MACHINERY — EQUIPMENT
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EAST GLASTONBURY WOOLEN MILL, East Glastonbury, Conn.
Also some good machinery items available at
CARYVILLE MILLS, CARYVILLE, MASS. *and*
ROCHESTER TEXTILE MILLS, ROCHESTER, MICH. *and*
IN OUR 3 WAREHOUSES AT LOWELL, MASS.
Send for Lists

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Twenty (20) Collins, 160, 180 and 200 Spindle Machines suitable straight or fancy twisting. Tape driven 3½ inch gauge, six inch traverse, 2⅛ inch ring. Independent gearing each side.

No reasonable offer refused.

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USED OR REBUILT
Knitters: Ribbers: Loopers:
Seamers: Boarding: Dyeing.
Full Fashioned Hosiery Machines
Special attention to export trade

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ANY REASONABLE OFFER
IN GOOD FAITH WILL BE CONSIDERED

60 Ft. Pin *TENTER MACHINE*, Good Condition, Dismantled

1—60 In. 2 Rolls, **CALENDER MACHINE**
1—5 HP, **MOTOR**

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We carry the largest stock of good used and reconditioned equipment in the U. S. A. for seamless—Full Fashion—Dyeing and Finishing—Write for Catalogue.

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508-514 W. Fifth St. — Charlotte, N. C.

WE OWN AND OFFER FOR SALE

3—WHITIN (Nasmith) MODEL "E" COMBERS, 12" lap, with Roth Aspirators
1—WHITIN MODEL D-3 COMBER, 12" lap
1—WHITIN MODEL D-4 COMBER, 12" lap, with Aspirators
11—84" reed space DRAPER LOOMS, equipped with 16-harness Intermediate Heads, Feelers, Stafford Cutters, worm takeup, ind. motor driven by 1 H.P. motors.
10,000—SILVER KING (new) 12"x36" SEAMLESS FIBRE ROVING CANS.

A. F. FYANS
Textile Machinery
56 Water St. — **Fall River, Mass.**

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CARDING AND PICKING MACHINERY

1—Sargent Raw Stock Dryer 108" wide with Auto Feed
1—Back Washer and Dryer
1—D. & F. 48x60" All Iron Breaker Card
C. & M. Fearnaught Mixing Pickers 36" & 48" Auto Feeds
1—C. & M. 48" Mixing Picker
1—Sargent 48" Duplex Burr Picker
1—D. & F. 42" Lumper
4—Rag Pickers, 18" dia., Dodge and Schofield
3—F. & J. Twisters 4 and 4½" ring
3—J. Hunter Garnetts 30x60". 2 and 5 cyl.
24—Collins Fancy Twisters 2¼", 2½", 3" and 4" ring

WARPING AND WINDING MACHINERY

100—Universal Winders, #50, #90, and #180 rebuilt to your order
4—Whitin Long Chain Quillers, wide gauge
4—Lindsay Hyde Skein Reels
2—D. & F. 92" Brass plate Warping Mill with Compressor
3—O. Lever Cop Winders
4—Foster Winders, various sizes

WEAVING MACHINERY

1—O. Lever Chenille Cutter
20000—Wood Spools 4x6" and 4½x6"
80—C. & K. 85" Automatic Looms
C. & K. Box Looms, all sizes, rebuilt
1—Royle Fine Index Repeater, Power driven
2—Amer. Warp Drawing In Machines, VLW 2

DYEING AND FINISHING MACHINERY

1—Powers Plush Splitter
1—C. & M. Tacking Machine with Singer Sewing head
1—66" Steiner Dewing Machine
4—J. Hunter Fulling Mills #10 and #11
1—2 cyl. Cloth Steam Finishing Machine
4—Voelker 66½" Double bed Cloth Presses
1—Gessner 80" Double bed Cloth Press
1—Gessner 72" Double bed Cloth Press, Century type
2—C. & M. Cloth Gas Singers 1—2 burner and 1—4 burner
4—Kenyon Chinchilla Machines
1—P. & W. 48" Doubl. & Meas. Machine, Chinaman type
2—Plush Shears 66" Curtis & Marble also Parks & Woolson
4—P. & W. 66" Model A Double Shears
4—P. & W. 66" Model B Double Shears
3—C. & M. 66" Double Shears
16—Extractors, various widths, Tolhurst, Fletcher and A.T. & M. Co. makes
1—Sargent Filling Yarn Conditioning Machine
1——P. & S. Overhead Dryer 11'x65'

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9—H. & B. 40" **Cards**, 12" Coilers
1—I-R 12"x10" **Air Compressor, Tank & Cooler**
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2—**Wright steady dial Loopers**, 26 point, serial #11624S, #11694S.
2—**Record Loopers**, 26 point.
3—**Union special Seamers**, style #41200A.
2—**American safety Tables, for loopers & seamers**, and all other necessary equipment for efficient operation of this plant.

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Machinery & Equipment will be sold in single lots only & consists of

1 Atherton Beater Picker
2 Atherton Intermediate Lappers
2 Atherton Finishing Lappers
22 Mason Cards 40"
10 Mason 4 Deliveries Drawings

216 MODEL E DRAPER LOOMS — 36" & 40"

Some Equipped with Dobby Motions

1 SET Textile Finishing Machine Co. Dry Can Machine—9 Cans
36 Fales and Jenks Frames—224 Spindle Each
4 Easton & Burham Spoolers — 100 Spindle Each
Barber-Colman Portable Warp Tieing Machine with Inserted Motor and 2 Stands
4—90 Spindle Providence Intermediates —5x10
8—132 Spindle Providence Speeders—5½x8
3—56 Spindle Providence Slubbers
Cohoes-Slasher—2 Cyl. & Stand—Fully Equipped
Proctor & Schwartz Large Yarn Dryer

Morton Dye Kettle—1000 lb. cap., 2 Foster Winders—100 Spindle Each, 4 Interwistle Warpers—420 Ends Each—Fully Equipped with Meters, Beams, etc., 3 Universal Winders, Curtis & Marble Sewing & Rolling, Brusher, Folder & Cloth Inspection Machines, Butterworth 3 Roll Calander, Lowell 48 Spindle Twister, Whiten Quiller, Cloth Bank Machine, Band Machine—9 Operations, Starch Kettles, Cocker Continuous Indigo Dyeing Machine 6 Delivery, Morton Beam Dye Kettle with Pump and Connections, Quill Skimmer, C. B. Sargent Yarn Conditioning Machine.

Boomer & Boshet 200 ton Baling Press, 1 Toledo Floor Scale—1,000 lbs., 25 Motors from 5—200 H.P., 1—Westinghouse Generator, 3—50 KW Transformers, Large Sturdevent Blower, Chain Hoists, Chicago Pneumatic Air Compressors—9x8.

600 Sets Loom Harness, 600 Roving Cans, 100,000 Metal Rim 1½" Twister Spools, 3 Ring Brass Ferrule Filing Bobbins 6" Traverse & Brass Ferrule Warp Spinning Bobbins, 7½" Traverse & other Standard Bobbins, Automatic Counters, Large Quantities Reeds, Gears, Beams, Loom and Machine Equipment, Parts, Supplies, etc.

10,000 Lbs. BELTING 2-10"—Large quantity of Shafting, Hangers, Pulleys, Trucks, Scales, etc.

MACHINE SHOP—Steptoe 24" Shaper, Bradford Engine Lathe, Acetylene Welding Outfit, Whiten Gear Cutter, Filter Ingersoll Compressor, Hack Saw, Pumps, Small Tools, etc.

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Heine Water Tube 200 HP Boiler with Pulverzone Automatic Coal Burning System, Erie City Iron Works 100 HP Boiler, Bates Corliss Engine 18x48, 250 HP Condensers, Water Feed & Fire Pumps, Sprinkler System, Humidifying System, Large quantities Pipe from 2—30" throughout entire plant.

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Realty will be sold in 1 lot or in sections, free and clear without limit or reserve
Machinery will be sold in single lots without limit or reserve

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TWISTING MACHINES
Whitin Novelty Yarn Twisting Machines Tape Drive, Individual Motors, Reverse Twist Arrangement, 200 Spindles each 3½" Gauge, 2" Vertical Rings. Excellent condition
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330 W. 42nd St., New York City

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1—50″ **Van Vlaanderen Back Filling Machine**
1—60″ **C & M Brushing Machine**
1—39″ **Moire Calender**
1—42″ **Cire Calender**
1—60″ **3-roll Calender**
1—72″ **Butterworth** 2-roll Hydraulic **Calender**
2—sets of 3 **Davis & Furber** 60″x60″ **All Iron Cards,** triple apron condensers
1—50 sp. **Foster #12 Coner**
4—80 sp. **Foster #12 Coners**
6—72″ **Jahr Piece Goods Carbonizing Machine** with lead lined acid tanks, squeeze rolls, etc. Complete.
50—6 sp. **Universal #50 Coners,** motor
1—set of 28 **Textile** 23″x60″ **Dry Cans,** Vert. Frames
1—8 stick **Giles Skein Dyeing Mach.** Monel lined
2—20 stick **Klauder Weldon Skein Dyeing Machines,** Haveg & Monel
3—28 stick **Klauder Weldon Skein Dyeing Machs.,** Hoist type Monel and copper lined
1—56 stick **Klauder Weldon Skein Dyeing Machine,** Hoist type, stainless steel lined
3—28″ **Embossing Machines**
5—36″ **Embossing Machines**
10—40″ **Embossing Machines**
Numerous engraved Embossing Rolls and paper covered rolls (singles and in sets)
4—54″ **Embossing Machines**
1—30″ **Poland Copper Basket Extractor**
1—40″ **Weston Hydro Extractor,** belt
1—48″ **Amico Extractor,** V-belt motor
1—40″ **Textile Ribbon Finisher** with Quetch & Cans
38—**Wildman** Style FBS-S, 28 cut, 12 feed, **knitters** equipped with **Duplex Furnishing Wheel,** motor driven, 440 volts, 60 cycle, 3 phase, A.C.
10—20″ — 6—22″ — 5—23″ — 17—26″
4—**Tompkins Tables,** 18 cylinders, 18 and 26 gauge, 4 feed
117—42″ **Draper Modified "D" Looms,** 20 harness, motor
350—43½″ **C. & K. 4x1 Automatic Looms,** some with dobbies and some with roller tops. Motions
150—48½″ **C&K 4x1 Automatic Looms,** Cam Harness Motions
96—62″ **Draper Automatic Looms,** belt
30—62″ **C&K 4x1 Jacquard Looms**
20—64″ **C&K 4x4 Jacquard Looms**
3—22 point **Wright Steady Dial Loopers**
1—44″ **Hunter** 2-cylinder **Wool Opener**
1—80″ **2-roll Padder** with copper lined tank
1—67″ **Morrison Palmer** with 2-roll Quetch
1—40″ **Sargent Multiplex Burr Picker**
1—65″ **Voelker Rotary Cloth Press**
1—66″ **Gessner Rotary Cloth Press**
1—52″ **Waldron** 12-color **Printing Machine** complete with blanket, tower, motor, etc.
1—54″ **Rice, Barton & Fales** 6-color **Printing Machine** comp. with blanket, tower, mtr., etc.
2—54″ **Textile Finishing Machinery Co.** 8-color **Printing Machines** complete with blanket, tower, motor, etc.
1—60″ **C & M Plush Shear**
1—78″ **P & W** 2-blade **Woolen Shear**
1—60″ **Clerc Renaud** 2-burner **Gas Singer**
1—65″ **Butterworth** 4-burner **Gas Singer**
1—60″ pair of **Iron Squeeze Rolls** with Starch tank
1—60 ft. **Textile Pin Tenter,** 60″ opening
1—40 ft. **Butterworth Tenter,** 65″ opening, Stainless Steel Clips
1—60″ **C & M Tiger**
6—72 spindle **Whitin Trap Twisters,** tape drive, (1933) 4″ ring, 5″ gauge.
15—**Collins Novelty Twisters,** tape driven, 2½″ ring, 3½″ gauge, 6″ traverse

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2—60″ TAPE CONDENSERS.
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Burr Wheels, all gauges.
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SPOOLER....
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TEXTILE TOOLS

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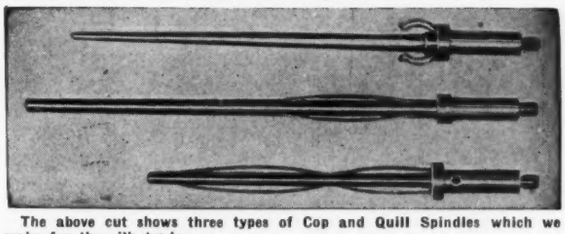
Dept. T-12 Kenosha, Wisconsin



The above cut shows three types of Cop and Quill Spindles which we make for the silk trade.

Cop and Quill Spindles are made up to your individual requirements, according to size and type, to correctly fit your cops and quills.

The spindle on the bottom is equipped with an adjustable collar. By moving this collar in or out on the spindle it is possible for you to use, within certain limits, quills of different lengths.

You can save money by buying your cop and quill spindles from us. Our prices are right and our workmanship and materials are the best. Try us for your next order.

Wayne Mfg. Co., Honesdale, Pa.

MURDOCK Bobbin Holders

Two exclusive Features Affording Long Life:

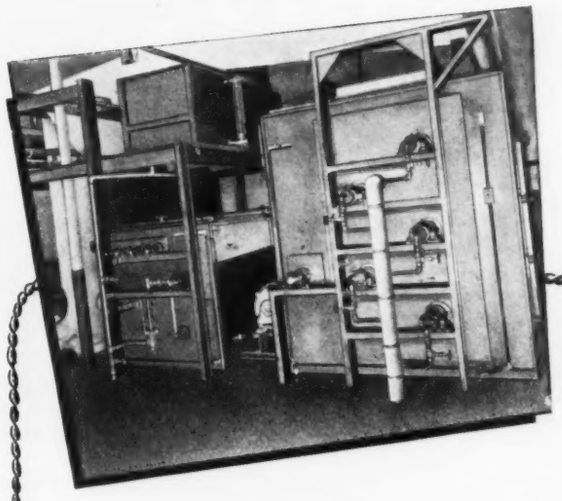
1. Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.

2. Holding wings held positively in position by skeleton washer—no sliding around.

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins. Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.

Manufacturers of Bobbin Holders for Over Fifty Years



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CONTINUOUS DRY CLEANER

THIS REVOLUTIONARY MACHINE OFFERS A **9 Point Economy Program**

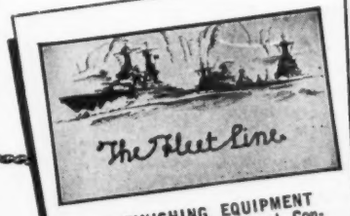
1. Complete removal of tar, chalk marks, paint, etc.
2. 99.8 to 99.9% removal of process oil, mineral or vegetable.
3. Tremendous savings in oil.
4. No stream contamination from oil residue.
5. Burling and mending time greatly reduced because clean fabric makes imperfections prominent.
6. Scouring for cleanliness eliminated.
7. Savings in soap and alkali as high as 75%.
8. Big saving in steam.
9. Great reduction in redyes and seconds.

Circular on Request

RIGGS & LOMBARD, Inc.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

AGENTS: Paul A. Merriam, 11 Berwick Lane, Edgewood, R. I.; Ernest F. Culbreath, 602 Commercial Bank Bldg., Charlotte, N. C.; Harold L. Osler, 6312 Sherwood Road, Philadelphia, Pa.



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Cloth Washers, Batch and Continuous • Fulling Mills • Piece Dye Kettles • Dye Becks • Rope Soapers • Cloth Carbonizing Ranges • Derby Continuous Dry Cleaner • Soaping Machines • Tenter Dryers • Crushers • Rolls • Reels • Parts.

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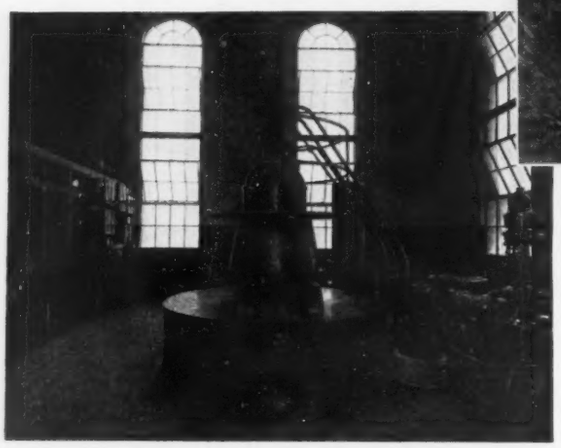
Another Example of Modernizing with

SMITH-KAPLAN TURBINES



This modern hydro-electric plant of the City of Radford, Va., is equipped with a Smith-Kaplan Automatically Adjustable Blade Turbine of 3,000 Hp., which replaced a pair of horizontal, old-style turbines. It is interconnected with the city's Diesel Plant, which serves to increase "firm power" capacity.

Due to the high efficiency of the Smith-Kaplan turbine, at all stages of river flow and head, a substantial saving in fuel costs at the Diesel station is effected.

As a result of the construction of these plants local industries have expanded. What we have done for others, *we can do for you.* Write

S. MORGAN SMITH COMPANY YORK, PA.

Slatersville Finishing Co. Slatersville, R. I.

The INDUSTRIAL FLOORING *that can take it!*

Carey Elastite ASPHALT TILE

This improved flooring—developed by CAREY research—is tougher, longer wearing—a flooring that can take a beating from wheeled traffic, yet is resilient and comfortable for workmen. Withstands highly compressive loads and rough usage; reduces accidents, steps-up efficiency.

An ideal material for factory and warehouse floors; loading platforms, offices, laboratories, stores. Firesafe; moisture and weather resistant. Also specified for protection of built-up roofs subjected to traffic—makes them valuable for use as sun decks or recreational activities.

Specify CAREY Elastite Asphalt Tile for new construction and for resurfacing rough or worn floors. Write for catalog—address Dept. 56.

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Dependable Products Since 1873
BRANCHES IN PRINCIPAL CITIES

for Results

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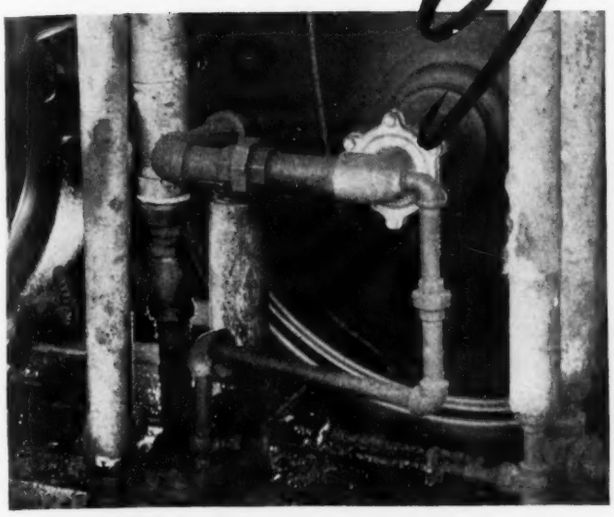
It makes the old way seem crude—



● A typical application. Steam enters through the large pipe; condensate, air and gasses are being removed through the smaller pipe. There is a type of head for every textile machine—slasher, dry can, sanforizer, calender.

WHEN Johnson Rotary Pressure Joints go in a lot of trouble goes out. As a means of feeding steam to cylinders and drums they end the oiling, the packing and re-packing, the adjusting and the troubles caused by misalignment of piping or pressure joint.

But Johnson Joints are equally effective in draining rolls and removing air and gasses through the same businesslike head that admits the steam. Modern syphon pipe drainage takes the place of cumbersome bucket drainage. Condensate comes out through the same trouble-free joint that admits the steam. As a result, heating up time is reduced; roll temperature can be higher and more uniform.

This is not an expression of our own opinion. The merit of Johnson Joints is confirmed by their adoption by many manufacturers of textile machinery as standard equipment . . . also by the operating records of thousands that are being installed on existing machines. Savings in maintenance alone pay the cost of change-over; after that the Joints pay a dividend in more and better production.

Write for new catalog

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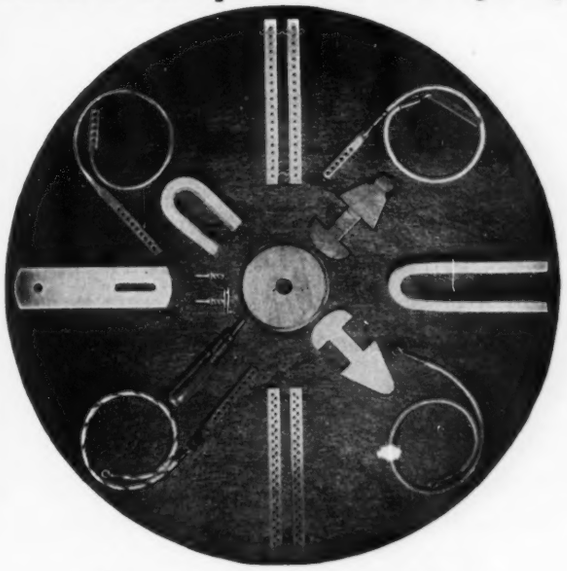
814 Wood Street, Three Rivers, Michigan

Johnson Rotary Pressure Joint

QUALITY TANKS
are made by
HAUSER-STANDER
for those who are tired of the extravagance of Cheap Tanks.

THE HAUSER-STANDER TANK CO.
Cincinnati, Ohio

Rice Dobby Chain Company



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U. S. A.

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MR. JOHN P. BATSON,
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LEADING MANUFACTURERS *OF* TEXTILE EQUIPMENT

have signed contracts and will display standard and improved installations, machinery, accessories, building, operating and office supplies, primary and fabricating materials, and parts at the

14th SOUTHERN TEXTILE EXPOSITION
MARCH 31 to APRIL 5, 1941
TEXTILE HALL
GREENVILLE, SOUTH CAROLINA

The exhibits will answer any production question for manufacturers of yarn and cloth made of cotton, rayon, silk, and wool.

To meet competition successfully textile plants must continuously make replacements and improve equipment. It is essential to the prosperity of any mill that representatives of its financial and operating personnel attend the Exposition.

Our Rooms Committee will see to it that all who attend the Exposition will be able to obtain comfortable quarters.

Note: This Exposition is exclusively for the textile industry. Due to the large attendance and crowded aisles, it is regretted that children under sixteen years of age cannot be admitted.

GRAVER
WATER TREATING EQUIPMENT

Hard water is an enemy of fine fabrics. Protect the product of your mill with pure, soft water delivered by **GRAVER WATER TREATING EQUIPMENT.** For complete details write Graver Tank & Mfg. Co., Inc., Dept. 5, East Chicago, Indiana. • • • •

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The IDEAL BASKET for

LOOPERS

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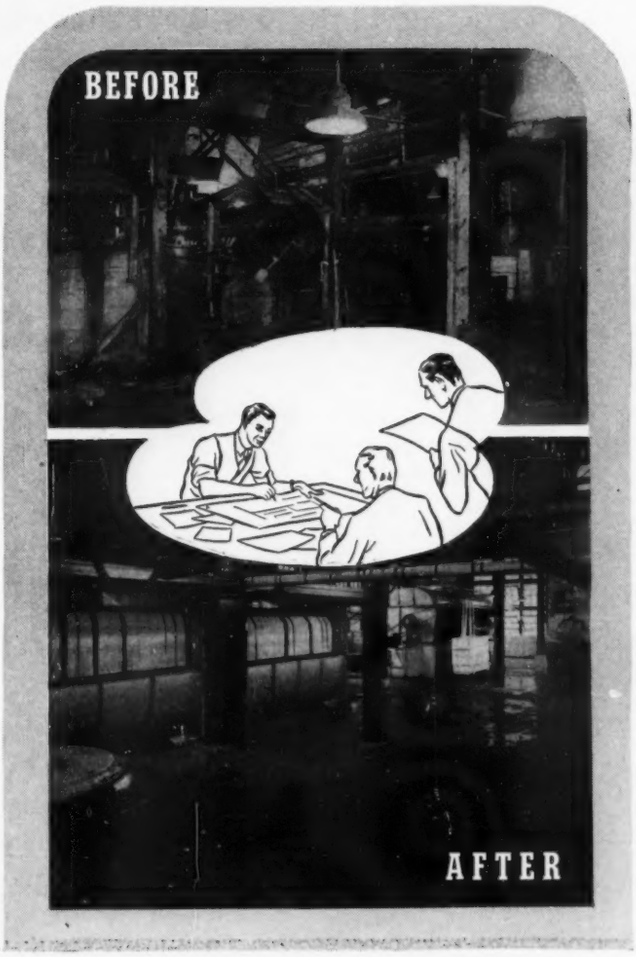
Manufacturers : **POUGHKEEPSIE, N. Y.**



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FOR PRODUCTION!

A TYPICAL dye-house modernization — planned and executed by Rodney Hunt engineers. Power and labor savings alone will pay for the complete installation in *less than two years!*

Six modern Stainless Steel TRU-SHADE Dyeing Machines have re-placed *twelve* old-fashioned wood machines in this dye-house. Their exclusive patented features not only reduce labor and power costs but also greatly increase speed, production and quality of work.

THAT IS MODERNIZATION THAT PAYS!

Ask Rodney Hunt to submit complete data on modernizing YOUR dye-house. It costs nothing to get the facts! *Write for TRU-SHADE Catalog No. 539.*

RODNEY HUNT **RODNEY HUNT MACHINE CO.**

66 MILL STREET ORANGE, MASS.

NEW LIGHT ON YOUR CLEANING JOBS

ARE YOU WORKING ON GOVERNMENT ORDERS?

Whether you are busy on Government Orders or other rush production, dependable Oakite cleaning materials, methods and service can help you get effective, low-cost results on these jobs:

1. **Cleaning knitting machine heads**
2. **Cleaning greasy gears, frames and other drying machine parts**
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4. **Keeping humidifying systems clean**

Write today for specific, money-saving data on these and such other maintenance jobs as cleaning heddles, steam cleaning dye vats, top roll recovering, etc. No obligation, of course.

OAKITE PRODUCTS, INC., 42 Thames St., New York, N. Y.
Representatives in all Principal Cities of the U. S. and Canada

OAKITE *Certified* **CLEANING**
MATERIALS & METHODS FOR EVERY CLEANING REQUIREMENT

"What's the name of that mill at Jumpoff Junction?"

You'll FIND the ANSWER in the new edition of the TEXTILE WORLD MILL DIRECTORY

Order your copy today

THE new edition of this annual directory is completely up-to-date, incorporating in its 480 pages the hundreds of changes which have taken place in the textile industry throughout the year.

As in previous editions, it provides a two-way method of locating textile mills in the United States and Canada. (1) The alphabetical index shows the location of the mill; (2) the geographical arrangement, by States, cities and towns, enables you to locate mills, the names of which may have slipped your mind.

Mill listings include the address and all other available information: capitalization, names of officers and buyers, principal products or services, kind and quantity of textile machinery and equipment; plus a bold face symbol which makes it a simple matter to spot mills by kinds of activity.

The Mill Directory binding is the flexible kind which has proved so popular for use at the desk or while traveling. Salesmen particularly like it because it is durable, easy to handle, easy to carry in the brief case and because it contains maps on which the location of every mill town is clearly indicated.

Again this year, the price of this handy, useful volume is $3.00 per copy. You'll save a lot of time and effort for yourself and your salesmen and those responsible for your direct-mail selling (if you have occasion to circularize certain types of mills) by obtaining several copies of the Textile World Mill Directory.

HERE'S A TYPICAL MILL DIRECTORY LISTING

(from a page in the Pennsylvania section)

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(2) (G-15) 4,851 (3) (4)
GENERAL RIBBON MILLS, INC.; 1115 Front St. (5) $100,000
(6)
Pres. ..... I. E. Stark
Treas. ..... J. W. Stark
(New York, N. Y.)
Supt. ..... J. J. Lowe
Buyer ..... R. A. Butland
Ribbons of All Descriptions; dye raw stock and yarns; bleach and finish (7)
222 Plain narrow looms (8)
Buy 8/8, 18/3, 30/2, 50/2 cotton; 20s and 22s silk; all den. rayon (9) (10)
Sales Agents: Stark Bros. Ribbon Corp., 352 Fourth Ave., New York, N. Y.

1—Name of town
2—Key to location on map
3—Population of town
4—Symbol
5—Capitalization
6—List of officers and buyer
7—What the mill produces
8—Machinery installed
9—What yarns the mill buys
10—How the mill sells

Send your order in today. You will be billed later.

Textile World

Directory Dept. **330 W. 42nd St., New York, N. Y.**

INDEX TO ADVERTISERS

An * indicates additional data will be found in 1940 Textile World Yearbook and Catalog.

	Page
Acme Knitting Machine & Needle Co.	147
Allen Mfg. Co.	116
*Allis-Chalmers Mfg. Co.	Inside Back Cover
Aluminum Company of America	132
Ambler Textile Machy Co.	146
American Chain & Cable Co., Inc., Wright Mfg. Division	141
American Magnesium Corp.	36
*American Moistening Co.	104
American Pulley Co.	24
American Rolling Mill Co., The	33
American Woolen Co.	144
Arlington Mills	118
Aroostook Potato Products, Inc.	138
Atlantic Rayon Corp.	Back Cover
Atlas Electric Devices Co.	38
Atwood Mach. Co.	79
Bailey, Frank	126
*Barber-Colman Co.	121
Becco Sales Corp.	13
*Booth Co., Benjamin	122
Borne Scrymser Co.	148
Boyle Co., A. S., The	141
*Brown Instrument Co., The	128
Calco Chemical Div., American Cyanamid Co.	7
*Caldwell Co., W. E.	156
Carey Co., Philip, The	158
Cidega Machine Shop, Inc.	146
Clinton Company	100
Colgate-Palmolive-Peet Co.	127
Collins & Aikman Corp.	142
Cooper Co., Chas.	146
Corn Products Sales Co.	120
Cramerton Mills	118
*Crane Mfg. Co.	144
Dana Warp Mills	143
*Dary Ring Traveler Co., The	143
*Davis & Furber Machine Co.	160
*Dinsmore Mfg. Co.	144
*Dommerich & Co., L. F.	18
Draper Co., J. O.	148
*Draper Corporation	3
*Du Pont de Nemours & Co., E. I. Finishes Division	135
Grasselli Chemicals Dept.	119
R. & H. Chemicals Dept.	4
Eastern Commercial Travelers Ass'n	116
*Economy Baler Co.	156
Fairbanks-Morse & Co.	34
Falls Yarn Mills	142
*Fidelity Machine Co.	118
Fleur-O-Lier Manufacturers	27
*Fuller Brush Co., The	136
*Gardinol Corp.	125
*General Electric Co.	30, 31, 130, 131
General Electric (Lamp Dept.)	21
Globe Dye Works Co.	148
Goodyear Tire & Rubber Co., The	9
Graver Tank & Mfg. Co., Inc.	160
Gulf Oil Corp.	35
Hauser-Stander Tank Co., The	159
Heineman Corp., Oscar	142
Henry, Andrew K.	142
Hercules Powder Co.	123
Hinde & Dauch Paper Co., The	23
*Howard Bros. Mfg. Co.	29
*Hungerford & Terry, Inc.	112
*Hunt Machine Co., Rodney	161
*Hunter Machine Co., James	26
Hygrade Sylvania Corp.	17
Illinois Development Council	16
Industrial Rayon Corp.	22
International Salt Co., Inc.	115
*Ives Co., L. T.	146
*Johnson Corp.	159
*Kenyon & Son, D. R.	156
Knitting Arts Exhibition	164
Lane & Bros., Inc., W. T.	161
Lazenby & Co., Inc., F. A.	143
Lewellen Mfg. Co.	136
Loper Co., Ralph E.	126
Maguire & Co., Inc., John P.	101
Maple Flooring Mfgrs. Assoc.	10
Merrow Machine Co., The	147
Michigan Alkali Co.	113
Monomac Spinning Co.	118
Montgomery Co.	126
Morningstar, Nicol, Inc.	138
Mt. Hope Finishing Co.	116
*Murdock & Geb Co.	157
*National Aniline & Chemical Co., Inc.	25
National Oil Products Co.	140
*National Ring Traveler Co.	143
National Starch Products, Inc.	109
New Departure, Division of General Motors	83
New England Butt Co.	146
N. Y. & N. J. Lubricant Co.	143
Nonquit Mills	118
*Noone's Sons Co., Joseph, The	139
Oakite Products Co.	161
Old Dominion Box Co., Inc.	146
Pabst Sales Co.	106
*Paramount Textile Machinery Co.	124
Parks-Cramer Co.	102
Pawtucket Spinning Ring Co.	111
Penick & Ford, Ltd.	149
Pennsylvania Salt Mfg. Co.	103
Pequot Mills	140
*Perkins & Sons, Inc., B. F.	107
Permutit Co., The	11
Philadelphia Quartz Co.	149
Procter & Gamble	14
*Proctor & Schwartz, Inc.	140
*Pure Oil Co., The	156
*Reliance Electric & Eng'g Co.	15
Republic Steel Corp.	40
R. I. Humidifier & Vent. Co.	114
Rice Dobby Chain Co.	159
*Riggs & Lombard, Inc.	157
*Robert & Co.	Inside Front Cover
*Rohm & Haas Co., Inc.	117
Rome Soap & Mfg. Co.	156
Ryerson & Son, Inc., Joseph T.	122
*Saco-Lowell Shops	8
*Scholler Bros., Inc.	149
*Scott Co., H. L.	118
Smith Co., S. Morgan	158
Snap-on Tools Corp.	157
*Solvay Sales Corp.	110
*Sonoco Products Co.	81
Standard Mill Supply Co.	126
Standard Pressed Steel Co.	129
*Standard Soap Co. of Camden	122
Sterling Ring Traveler Co.	141
Taylor Instrument Co's.	134
Tennessee-Eastman Corp.	105
*Terrell Machine Co., Inc., The	108
Texas Co.	5
Textile Hall	160
*Thomas & Skinner Steel Products Co.	114
Tompkins Bros. Co.	147
*Torrington Co., The	19, 20
*U. S. Ring Traveler Co.	137
U. S. Testing Co., Inc.	138
*Universal Winding Co.	84
Wayne Mfg. Co.	157
*Westinghouse Elec. & Mfg. Co.	37
*Westinghouse Elec. & Mfg. Co. (Lighting Division)	28
(Precipitron Dept.)	133
*Whitin Machine Works	12
*Whitinsville Spinning Ring Co.	142
Whitman Co., Inc., William	118
Whitney Chain & Mfg. Co., The	32
Wildman Mfg. Co.	145
Wilson Co., Inc., Charles T.	156
Wolstenholme Sons & Co., Inc., Thos.	142
Wright Mfg. Division, American Chain & Cable Co., Inc.	141

■ ■ ■

PROFESSIONAL SERVICES

Loper Co., Ralph E.	126
Polachek, Z. H.	152
Robert & Co.	Second Cover

■ ■ ■

SEARCHLIGHT SECTION

Classified Advertising

AUCTION	154
BUSINESS OPPORTUNITIES	152
EMPLOYMENT SERVICE	
Raymond Service, Inc., Charles P.	152
LIQUIDATIONS	153
MILL FOR SALE	152
POSITIONS VACANT	152
POSITIONS WANTED	152
SELLING OPPORTUNITIES	152
WANTED TO PURCHASE	152
USED AND SURPLUS EQUIPMENT	152-155
Bay State Textile Co.	155
Cady, A. J.	155
Consolidated Products Co., Inc.	153
French, C. M.	153
Fyans, A. F.	153
Gaines Textile Machy. Co.	153
Horton, Harold W.	155
Machinery Liquidating Co., Inc.	155
McCloskey, Inc., John J.	155
McDowell, Norman M.	155
McKittrick Co., Frank G. W.	153
Mohawk Valley Kt. Mach. Co.	155
Smith, Philip	154
Smith Tex. Mchy. Co., G. E.	155
Speizman, Inc., David	154
Speizman, Morris	153
Stephenson, Harry	155
Weyl, Inc., Bernard A.	153
Wheeler, Frank W.	154
Williams Laundry Machinery Co., Inc.	154
Windle & Co., J. H.	154

A Four Days' Investment In Future Business!

the 37th Annual

KNITTING ARTS EXHIBITION

COMMERCIAL MUSEUM • PHILADELPHIA
APRIL 21, 22, 23, 24

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Drying Machinery
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Throwing Machinery
Sewing Machinery
Preboarding Machinery
Hosiery Repair Machinery
Inspection Equipment
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Boxing and Packing Supplies
Air Conditioning Equipment
Electrical Equipment
Testing Equipment
Office Equipment
Yarns of All Kinds
Chemicals, Oils and Soaps
Mill Supplies and Allied Products

—to Meet and SELL

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Mill Officials
Sales Managers
Financial Representatives
Purchasing Agents
Key Men in All Branches

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